



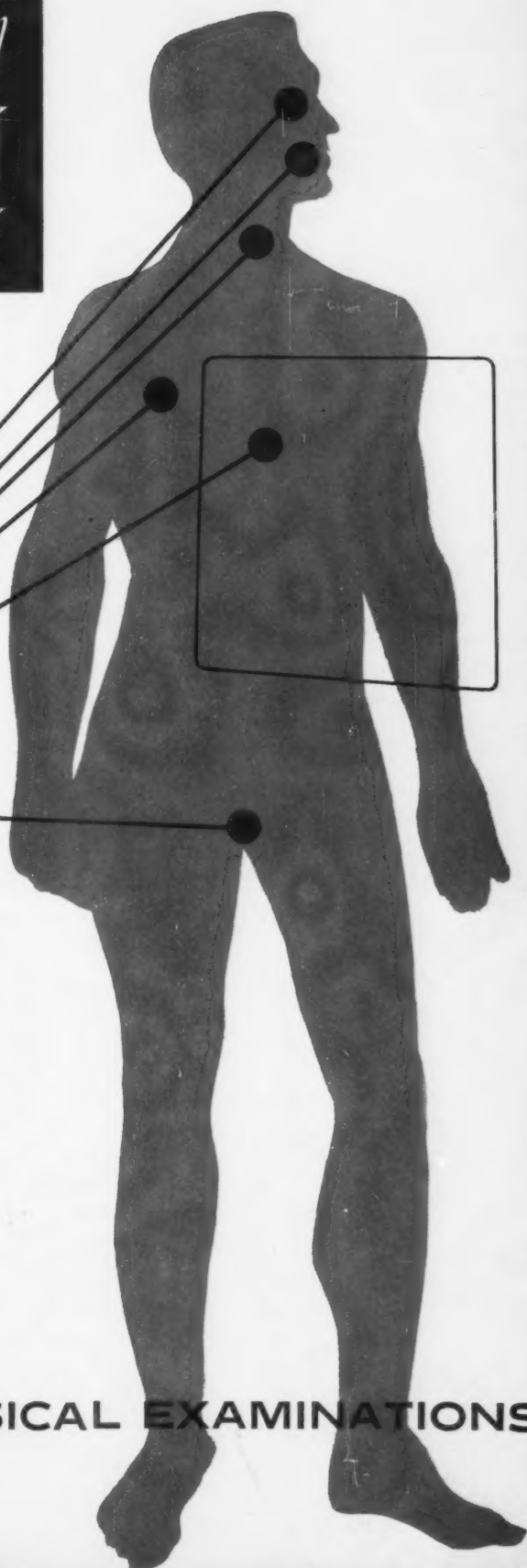
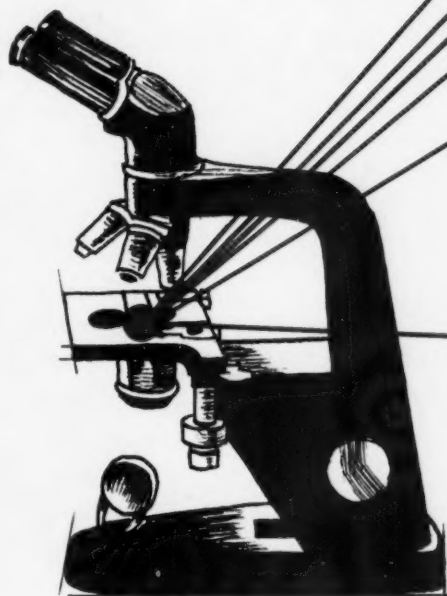
the Journal
MICHIGAN

STATE MEDICAL SOCIETY

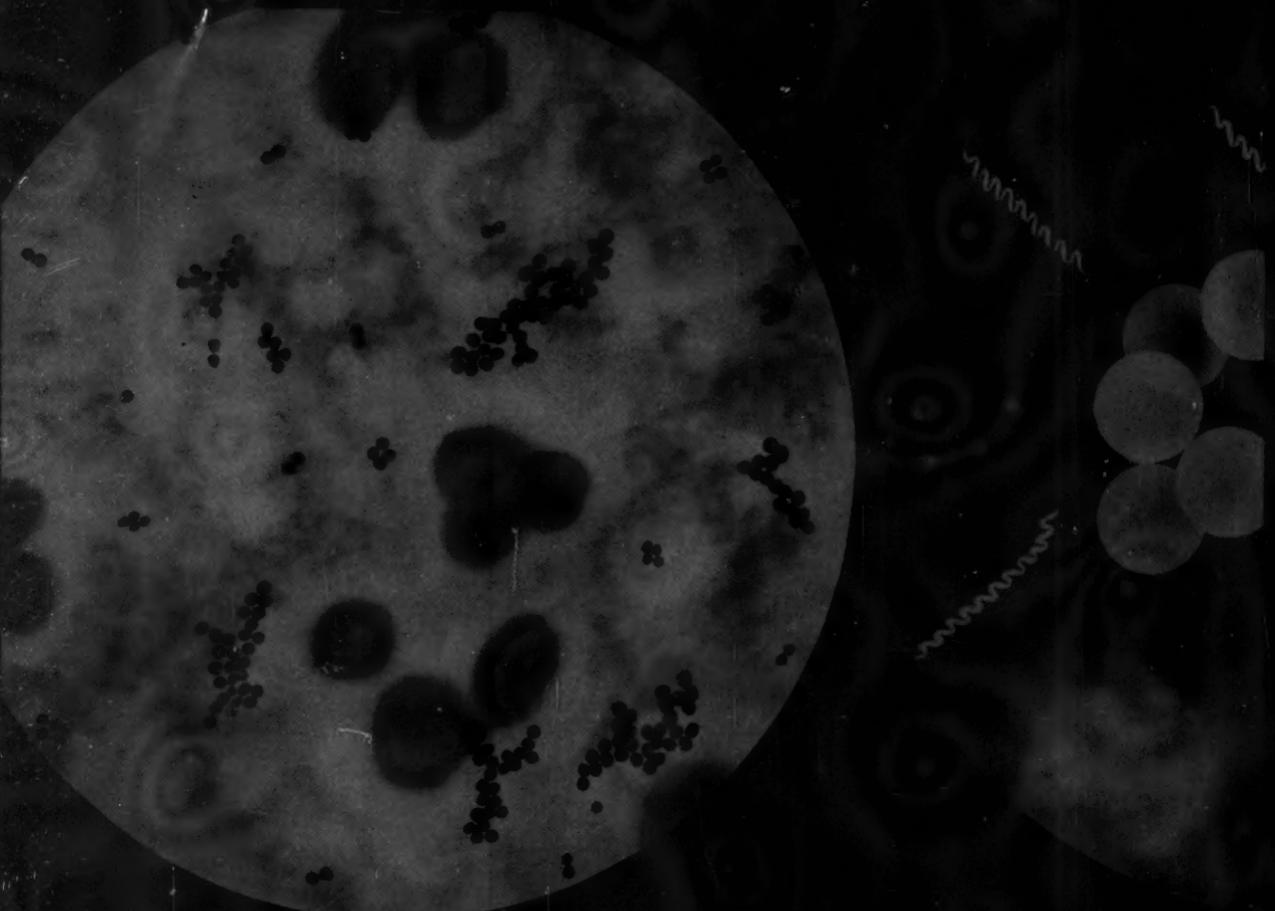
April, 1960

Volume 59, Number 4

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**IN VITRO SENSITIVITY OF GRAM-POSITIVE ORGANISMS TO CHLOROMYCETIN AND
TO THREE OTHER BROAD-SPECTRUM ANTIBIOTICS***



*Adapted from Leming & Flanigan.³

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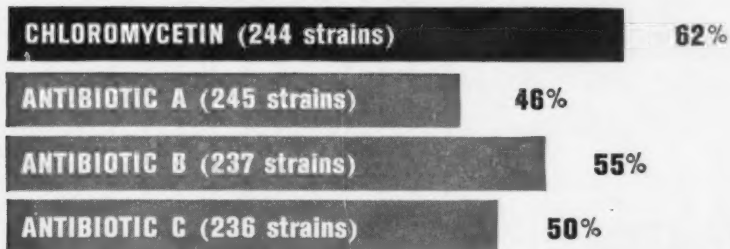
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References: (1) Morton, J. J.: *Yale J. Biol. & Med.* 31:397, 1959. (2) Rogers, D. E., & Louria, D. B.: *New England J. Med.* 261:86, 1959. (3) Leming, B. H., Jr., & Flanigan, C., Jr., in Welch, H., & Marti-Ibañez, F.: *Antibiotics Annual 1958-1959*, New York, Medical Encyclopedia, Inc., 1959, p. 414. (4) Edwards, T. S.: *Am. J. Ophth.* 48:19, 1959. (5) Olarte, J., & de la Torre, J. A.: *Am. J. Trop. Med.* 18:324, 1959. (6) Suter, L. S., & Ulrich, E. W.: *Antibiotics & Chemother.* 9:38, 1959. (7) Holloway, W. J., & Scott, E. G.: *Delaware M. J.* 30:175, 1958.

IN VITRO SENSITIVITY OF GRAM-NEGATIVE ORGANISMS TO CHLOROMYCETIN AND TO THREE OTHER BROAD-SPECTRUM ANTIBIOTICS*



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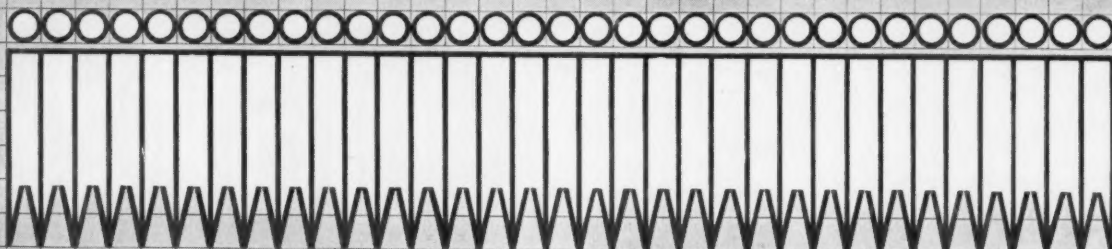
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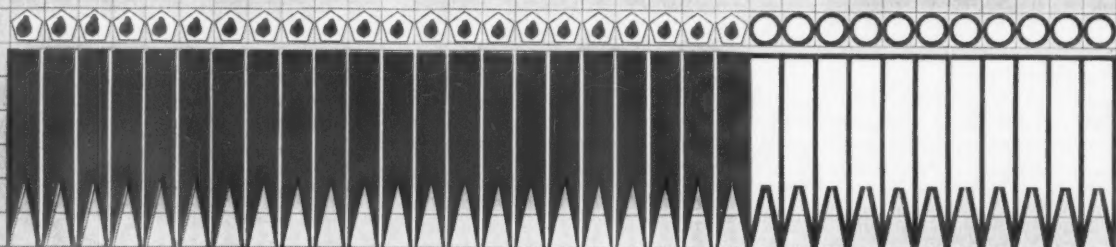
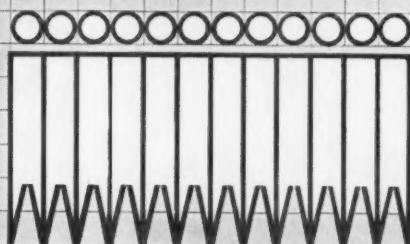
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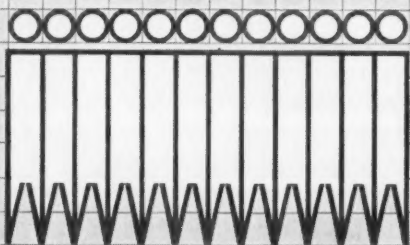
1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

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Volume 59

Number 4

April, 1960

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THE COVER

The Cover forcefully stresses the importance of complete physical examinations in the early detection of cancer. Artist Dirk Gringhuis' illustration shows how the combination of physical examination and laboratory research helps early diagnosis in carcinoma-prone areas.

APRIL, 1960

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President's Page

WOMAN'S AUXILIARY TO MSMS



Milton A. Darling

President

Michigan State Medical Society

The Michigan State Medical Society takes genuine pride in recognizing its indebtedness to the Woman's Auxiliary and the many fruitful years of its existence.

The brainchild of Dr. Caroline Bartlett Crane and Mrs. Guy Kiefer, the Auxiliary was organized in June 1927, at Mackinac Island, by Dr. Herbert E. Randall of Flint. It has expanded from 28 charter members to a total of 3,160, with 48 organized county societies and with members-at-large from each unorganized county.

Following its primary objective to serve the Medical Society, it achieved success in the American Medical Association's first assignment, that of promoting Hygeia, now called Today's Health.

Another AMA request was the adoption of a policy to inform the laity on current medical legislation. Concerted opposition to socialized medicine and support of Blue Cross-Blue Shield have been of paramount interest in many lay discussions. Today, defeat of the Forand Bill is receiving attention through distribution of AMA circulars, et cetera.

Countless hours of service have been given by Auxiliary members to such community projects as Cancer Control, Mental Health, Red Cross, Hospital Auxiliaries, Rural Health and even the registration of voters. A Tuberculosis Speaking Contest has been successful in many Michigan high schools. Aid to Veterans' Hospitals and Schools for the Handicapped have received attention.

Further assistance has been given the Medical Societies in polio vaccination programs, blood banks, tuberculosis surveys, as well as in manning medical society exhibits at state and county fairs.

Future Nurses Clubs in high schools, frequently with financial assistance, have been developed to combat the shortage of nurses and paramedical personnel.

In fact, in 1958-1959 alone, the Auxiliary gave more than \$5,500 to the American Medical Education Fund, and \$4,000 to furnish a lounge in the new MSMS building in East Lansing.

For such outstanding service, the Medical Society is deeply grateful, and with such loyal assistance, hopes for the future of the Woman's Auxiliary are most promising.

Reveal New State Society "Presidential Program"

STATE SOCIETY 527

At the County Secretaries-Public Relations Seminar, President Darling announced a new five-year MSMS program of health leadership. Watch future numbers of THE JOURNAL for periodic progress reports. Here is a review of his remarks delivered on January 31, 1960, in Detroit.

PIONEERS OF PROGRESS

By Milton A. Darling, M.D., President
Michigan State Medical Society

MEDICINE's target, and the reason for existence of the Michigan State Medical Society, has been, is now, and always will be the advancement of the science of medicine and the application of this knowledge in the form of better health for more people. We are constantly pushing toward our horizons of knowledge as we progress in applying the know-how we obtain from research and from daily practice.

Some of our publics have charged that organized medicine is reactionary and resistant to change. But as the politicians say, let's look at the record—the record of the Michigan State Medical Society.

Progress Reviewed

In medical education, the MSMS has urged successfully, and still urges, the expansion of medical school facilities and faculties, toward the end of meeting current and future demands for doctors of medicine.

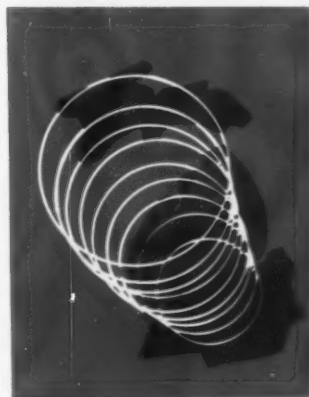
In a continuing program, the MSMS has campaigned hard to encourage young people to choose careers as a medical associate and is now striving to increase the number of qualified students who will enter the study of medicine.

By encouraging the formation of the Medical Foundation for Medical and Health Education, a revolving fund was established for the education of medical students.

To help doctors of tomorrow, the MSMS established the Annual Conference for Residents, Interns and Senior Medical Students.

Again, MSMS originated and continued as a major support of the Michigan Health Council and directed, through this organization the outstanding M.D. Placement Service in the nation, thereby encouraging doctors to go to communities where they are most needed.

In postgraduate education, the MSMS Annual Session and the Michigan Clinical Institute are considered models of organization and clinical content. In cooperation with the state's medical schools, it has produced a year-round Postgraduate Medical Education Program that has excited the envy of other states.



STATE SOCIETY

Scientific Journalism Praised

In scientific journalism, the JOURNAL OF MSMS has been named the outstanding publication of all 50 state medical societies, for the year 1959.

MSMS also assisted in establishing the Michigan Heart Association and the Michigan Association for Epilepsy (now the Michigan Epilepsy Center and Association) and coordinated the policies of six Michigan organizations interested in fighting cancer through the Michigan Cancer Control Committee.

MSMS originated and administered a statewide Rheumatic Fever Control Program and established 32 Diagnostic Centers.

It pioneered the Michigan Rural Health Conference, recognized as the finest of its kind in the nation.

In a constant effort to assure the best health care for Michigan people, the MSMS has acted to see to it that all practitioners of the healing arts are permitted to practice only within their respective areas of competency. This has been done through the constant vigilance of our Legislative Committee.

Although there are those who might argue specific details, I believe Michigan medicine is generally proud of having nurtured voluntary prepayment medical care plans in opposition to compulsory government schemes by the sponsorship of Michigan Medical Service and support of Michigan Hospital Service.

As the symbolic horse and buggy doctor was replaced by our modern practitioner with well-equipped offices and hospitals, and the practice of medicine became as complex as its science, the MSMS has with some success urged its members to increase their involvement in community and civic affairs. By so doing, the doctor has increased his stature on a far broader level and he himself has become more aware of economic and social needs and dangers which demand the concern of all intelligent citizens.

Promote Public Understanding

Within the last 20 years, MSMS members realized that their influence could be multiplied manyfold if public understanding could be obtained. The MSMS Public Relations Department was created in

1946. This was the first full-time activity of any state or national medical society. Since then, the Medical Society has worked toward the penetration of the curtain of public misunderstanding and has won many friends who share our concern for the future of medical care.

Through the presentation of awards, the MSMS honors the Foremost Family Physician of the Year and Michigan doctors who serve as presidents of national medical organizations. Thus the achievements of individuals are made known to the public.

Similarly, the profession honors laymen for outstanding service in the health field, medical reporting and for cooperation with MSMS in health education.

The MSMS Public Relations program has been recognized nationally time and again.

I have taken your time to review these accomplishments because their recitation dramatically reveals the role of the medical profession in Michigan as a Pioneer of Progress. It shows that we have had the energy and the fortitude in the past to make new pathways leading to the elusive goal of better health for the public and better understanding of the doctor's role in creating better health.

I don't think we have lost that spirit and we have the same quality of leadership and staff support that has made these accomplishments possible in the past. That is why today as your President, supported by the favorable decision of The Council and with the enthusiastic approval of your President-Elect, I am presenting a new program for your consideration and your help in administration.

Presidential Program Explained

This program is an "all out" professional effort to be formally inaugurated upon approval of the House of Delegates in September 1960 and the opening of the new MSMS Headquarters Building. It is a five-year program designed to culminate in September 1965 with the celebration of the 100th Anniversary of the MSMS.

It will be called the Presidential Program because we hope to obtain the endorsement and support of it by the President of every organization, association,

MICHIGAN MEDICAL MEETINGS AND CLINIC DAYS

April 7	Ingham County Medical Society Spring Clinic	Lansing
April 13	Genesee County Cancer Day	Flint
May 4	Wayne State University Clinic Day and Alumni Reunion	Detroit
June 17-18	Upper Peninsula Medical Society	Escanaba
July 28-29	Coller-Penberthy Clinic	Traverse City

and corporation in Michigan which has any interest or relationship to health and health problems and foremost among these, of course, are the Presidents of the County Medical Societies.

Through this program we hope to integrate the existing health forces already meeting medical standards, and of studying, screening and ultimately furthering and supporting potentially sound health developments which are now in need of expert medical review and appraisal.

As Dr. John M. Dorsey has phrased it:

"Every physician needs the kind of organized medical work which cultivate his proper sense of professional esteem . . . the mobilization of health interests under the authority and responsibility of our MSMS leadership will not only reveal the inefficacy of scattered medical strength but will build up the kind of medical morale which every physician can cherish as his own individual ideal."

The goal of this campaign is to make a 100th birthday present to the people of Michigan of five more good years of life as reflected in the general life expectancy statistics kept by the State Health Department.

Not A Geriatrics Program

Lest there be any misunderstanding—this is *not* a geriatrics program. Far more gain, toward increasing the good years of our life and the extent of life itself, is made by keeping alive and healthy the youth of our state than by increasing the longevity of the 80-year old. Statistically speaking, to keep a child of five alive and healthy, who would otherwise sicken or die, is twelve times as effective in increasing the general life expectancy of Michigan citizens than would be the adding of 5 more years to the life of a man aged 65.

Consequently, the main emphasis of our program to add a total of five years to the general life expectancy of our people must be upon the people whom you and I know serve with particular emphasis upon youth.

Dr. Bromme Appointed

William Bromme, M.D., Detroit, MSMS Councilor, 18th District, has been appointed, on a stand-by basis, as a member of the Michigan Advisory Committee to Selective Service. Doctor Bromme fills the vacancy on the committee caused by the death of Grover C. Penberthy, M.D., Detroit, who had been the Committee chairman.

The appointment was made by Elmer Hess, M.D., chairman of the National Advisory Committee to the Selective Service System, Washington, D. C.

MSMS acts as a unified ONE for the benefit of MANY.

APRIL, 1960

Say you saw it in the *Journal of the Michigan State Medical Society*

immortals of chinese mythology:



Ho Hsien-Ku

This gentle maiden became an immortal by her unique diet of moonbeams and mother-of-pearl

TODAY...

this steroid of unsurpassed safety and effectiveness holds an enduring place in the medical armamentarium

METICORTEN

METICORTEN,® brand of prednisone, 5 mg. tablets.

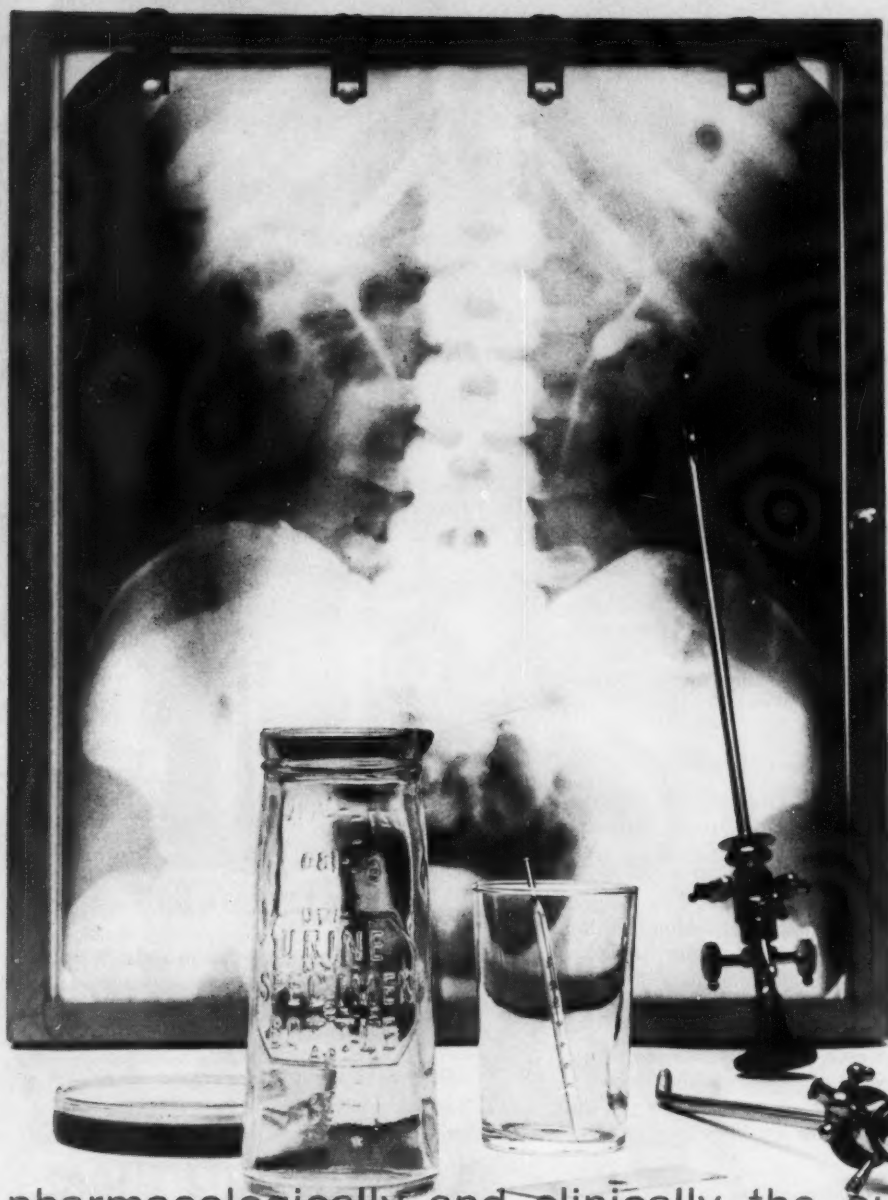
SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY

You will soon receive in your mail a handmade, four-color three-dimensional figure of this Chinese Immortal, mounted and suitable for framing.

8-3449

Schering

when
sulfa
is your
plan of
therapy...



pharmacologically and clinically the outstanding

Rapid peak attainment — for early control —
KYNEX® Sulfamethoxypyridazine reaches peak plasma levels in 1 to 2 hours^{1,2} . . . or approximately one-half the time of other once-a-day sulfas.² Uninterrupted control is then sustained over 24 hours with the single daily dose . . . through slow excretion without renal alteration.

High free levels — for dependable control —
More efficient absorption delivers a higher percentage of sulfamethoxypyridazine — averaging 20 per cent greater at respective peaks than glucuronide-conversion sulfas.² Of the total circulating levels, 95 per cent remains in the fully active, unconjugated form even after 24 hours.³

Extremely low toxicity⁴ . . . only 2.7 per cent incidence in recommended dosage — Typical of KYNEX relative safety, toxicity studies⁵ in 223 patients showed TOTAL side effects (both subjective and objective) in only six cases, all temporary and rapidly reversed. Another evaluation⁴ in 110 patients confirmed the near-absence of reactions when given at the recommended dosage. High solubility of both free and conjugated product⁶ obviates renal complications. No crystalluria has been reported.

Successful against these organisms: streptococci, staphylococci, *E. coli*, *A. aerogenes*, paracolon bacillus, Gram-negative rods, pneumococci, diphtheroids, Gram-positive cocci and others.

1. Boger, W. P.; Strickland, C. S., and Gylfe, J. M.: *Antibiotic Med. & Clin. Ther.* 3:378, (Nov.) 1956. 2. Boger, W. P.: *Antibiotics Annual 1958-1959*, New York, Medical Encyclopedia, Inc., 1959, p. 48. 3. Sheth, U. K.; Kulkarni, B. S., and Kamath, P. G.: *Antibiotic Med. & Clin. Ther.* 5:604 (Oct.) 1958. 4. Vinnicombe, J.: *Ibid.* 5:474 (July) 1958. 5. Anderson, P. C., and Wissinger, H. A.: *U. S. Armed Forces M. J.* 10:1051 (Sept.) 1959. 6. Roepke, R. R.; Maren, T. H., and Mayer, E.: *Ann. New York Acad. Sc.* 60:457 (Oct.) 1957.

KYNEX

is your
drug of
choice



once-a-day sulfa...

NOTE: Investigators note a tendency of some patients to misinterpret dosage instructions and take KYNEX on the familiar q.i.d. schedule. Since one KYNEX tablet is equivalent to eight to twelve tablets of other sulfas, even moderate overdosage may produce side effects. Thus, the single dose schedule must be stressed to the patient.

KYNEX Tablets, 0.5 Gm., bottles of 24 and 100. Dosage: Adults, 0.5 Gm. (1 tablet) daily, following an initial first day dose of 1 Gm. (2 tablets).

KYNEX Acetyl Pediatric Suspension, cherry-flavored, 250 mg. sulfamethoxypyridazine activity per teaspoonful (5 cc.). Bottles of 4 and 16 fl. oz. Recommended Dosage: Children under 80 lbs.: 1 teaspoonful (250 mg.) for each 20 lb. body weight, the first day, and $\frac{1}{2}$ teaspoonful per 20 lb. per day thereafter. For children 80 lbs. and over: 4 teaspoonfuls (1.0 Gm.) initially and 2 teaspoonfuls daily thereafter. Give immediately after a meal.

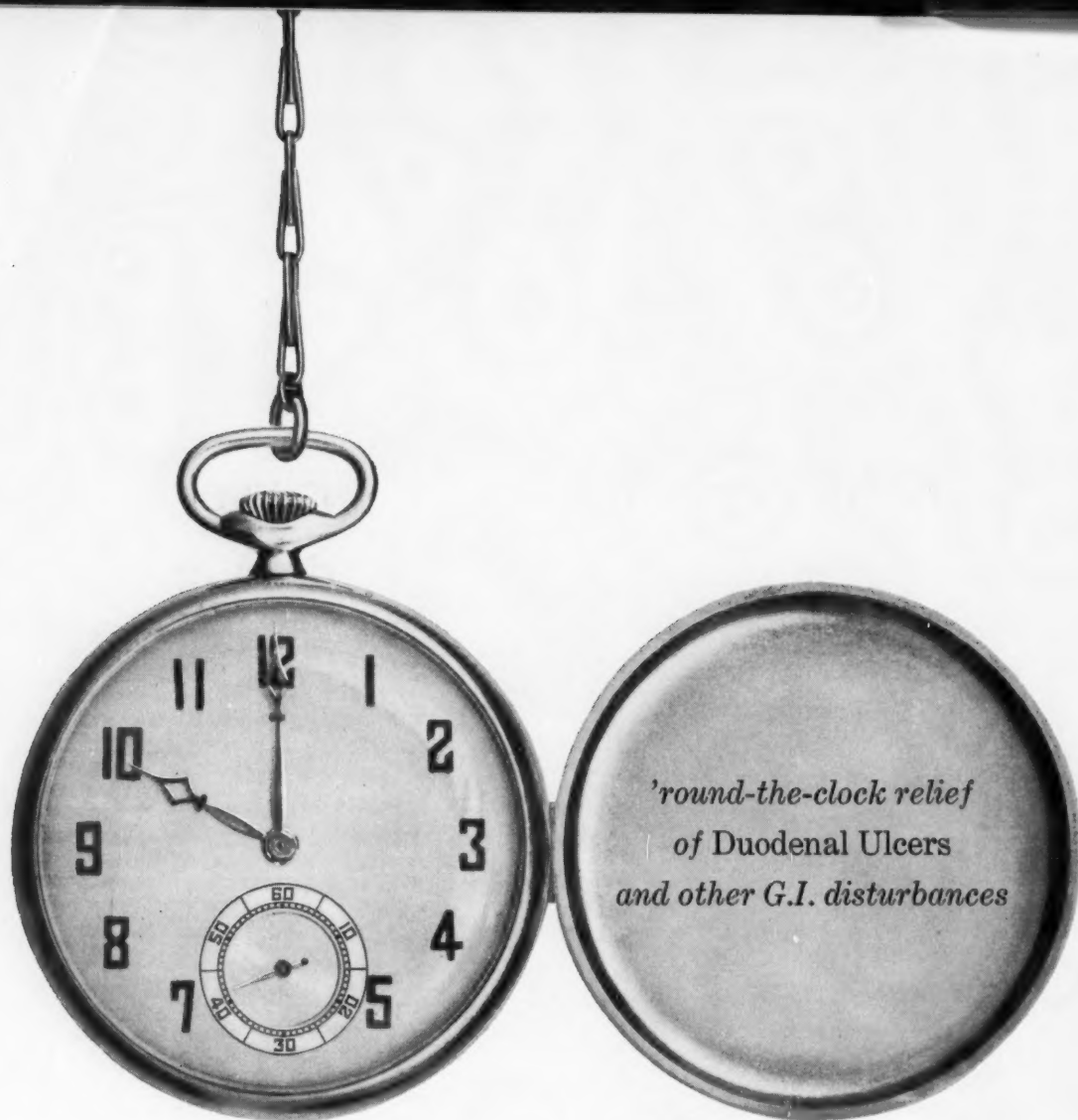
KYNEX[®]

Sulfamethoxypyridazine Lederle

NEW—for acute G.U. infection AZO-KYNEX[®] Phenylazodiaminopyridine HCl—Sulfamethoxypyridazine Tablets, contains 125 mg. KYNEX in the shell with 150 mg. phenylazodiaminopyridine HCl in the core. Dosage: 2 tablets q.i.d. the first day; 1 tablet q.i.d. thereafter.

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York





*'round-the-clock relief
of Duodenal Ulcers
and other G.I. disturbances*

with
daricon[®]

oxyphenyclimine HCl, 10 mg.

b.i.d.

"Good symptomatic responses were seen in 91 of 96 [patients] treated for periods up to one year with average doses of 10 mg. twice daily."

"[Daricon] appears to be a valuable agent . . . for day-to-day maintenance of all peptic ulcer patients."

Winkelstein, A.: Am. J. Gastroenterol. 32:66-70 (July) 1959.

Additional information is available on request from the Medical Department, Pfizer Laboratories, Brooklyn 6, N. Y.

(Pfizer) Science for the world's well-being™



When blood pressure must come down

When you see symptoms of hypertension such as dizziness, headache, and fainting your patient is a candidate for Serpasil-Apresoline. Even when single-drug therapy fails, Serpasil-Apresoline frequently can bring blood pressure down to near-normal levels, reduce rapid heart rate, allay anxiety.

SUPPLIED: Tablets #2 (standard-strength, scored), each containing 0.2 mg. Serpasil and 50 mg. Apresoline hydrochloride; Tablets #1 (half-strength, scored), each containing 0.1 mg. Serpasil and 25 mg. Apresoline hydrochloride.

SERPASIL-APRESOLINE®

hydrochloride (reserpine and hydralazine hydrochloride CIBA)

C I B A
SUMMIT, N. J.

17-2760000

DOES YOUR PRESENT ANTICHOLINERGIC REALLY

NOON **3 P.M.**

COMPARE THE DATA ON ENARAX . . . the new combination of an inherently long-acting anticholinergic (oxyphencyclimine) and Atarax, the non-secretory tranquilizer. Note the effectiveness of oxyphencyclimine:

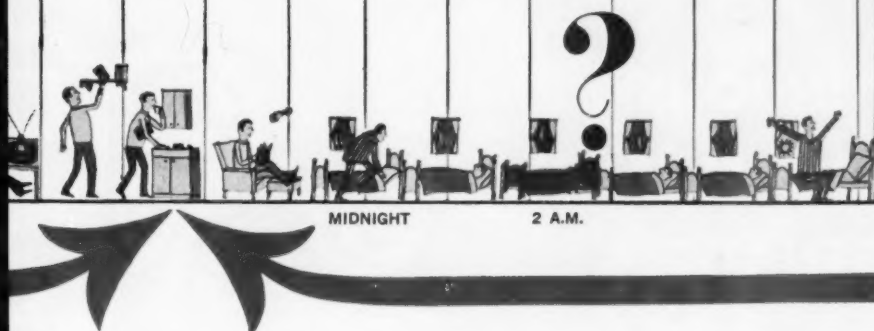
McHardy: "[Oxyphencyclimine] has proved to be an excellent sustained-action anticholinergic in our study of this agent over a period of eighteen months."

Add Atarax to this 12-hour anticholinergic. The resulting combination—ENARAX—now gives relief from emotional stress, in addition to a reduction of spasm and acid. Atarax does not stimulate gastric secretion. No serious adverse clinical reaction has ever been documented with Atarax.

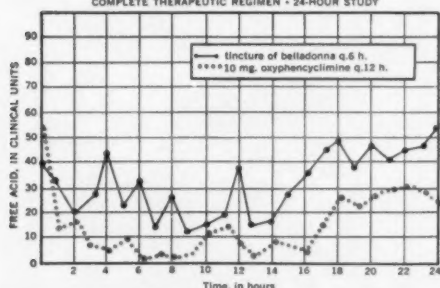
Does the medication you now prescribe assure you of all these benefits? If not, why not put your next patient with peptic ulcer or G.I. dysfunction on therapy that does.

IMSMS

PROVIDE CONTINUOUS CONTROL OF ACID SECRETION?



"Prolonged periods of achlorhydria" after 10 mg. oxyphenyclimine q. 12 h.
MEAN GRAPH OF GASTRIC ACIDITY IN 4 PATIENTS RECEIVING
COMPLETE THERAPEUTIC REGIMEN - 24-HOUR STUDY



Clinical Diagnosis: Peptic Ulcer—Gastritis—Gastroenteritis—Colitis—Functional Bowel Syndrome—Duodenitis—Hiatus Hernia (symptomatic)—Irritable Bowel Syndrome—Pylorospasm—Cardiospasm—Biliary Tract Dysfunctions—and Dysmenorrhea.

Clinical Results: Effective in over 92% of cases.

As for Safety: "Side reactions were uncommon, usually no more than dryness of the mouth..."¹⁴

Each ENARAX tablet contains:

Oxyphenyclimine HCl 10 mg.
Hydroxyzine (ATARAX®) 25 mg.

Dosage: One-half to one tablet twice daily—preferably in the morning and before retiring. The maintenance dose should be adjusted according to therapeutic response. Use with caution in patients with prostatic hypertrophy and with ophthalmological supervision only in glaucoma.

Supplied: In bottles of 60 black-and-white scored tablets.

References: 1. McHardy, G., et al.: J. Louisiana M. Soc. 111:290 (Aug.) 1959. 2. Steigmann, F.: Study conducted at Cook County Hospital, Chicago, Illinois, in press. 3. Kemp, J. A.: Antibiotic Med. & Clin. Therapy 6:534 (Sept.) 1959. 4. Leming, B. H., Jr.: Clin. Med. 6:423 (Mar.) 1959. 5. Data in Roerig Medical Department files.



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Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being™

IN SENILE CONFUSION . . .

**CONTINUOUS
CEREBRAL
OXYGENATION**

WITH

ONE

Geroniazol TT* b.i.d.



- Each Geroniazol TT tablet contains:
Pentylentetrazol 300 mg.
Nicotinic Acid 150 mg.

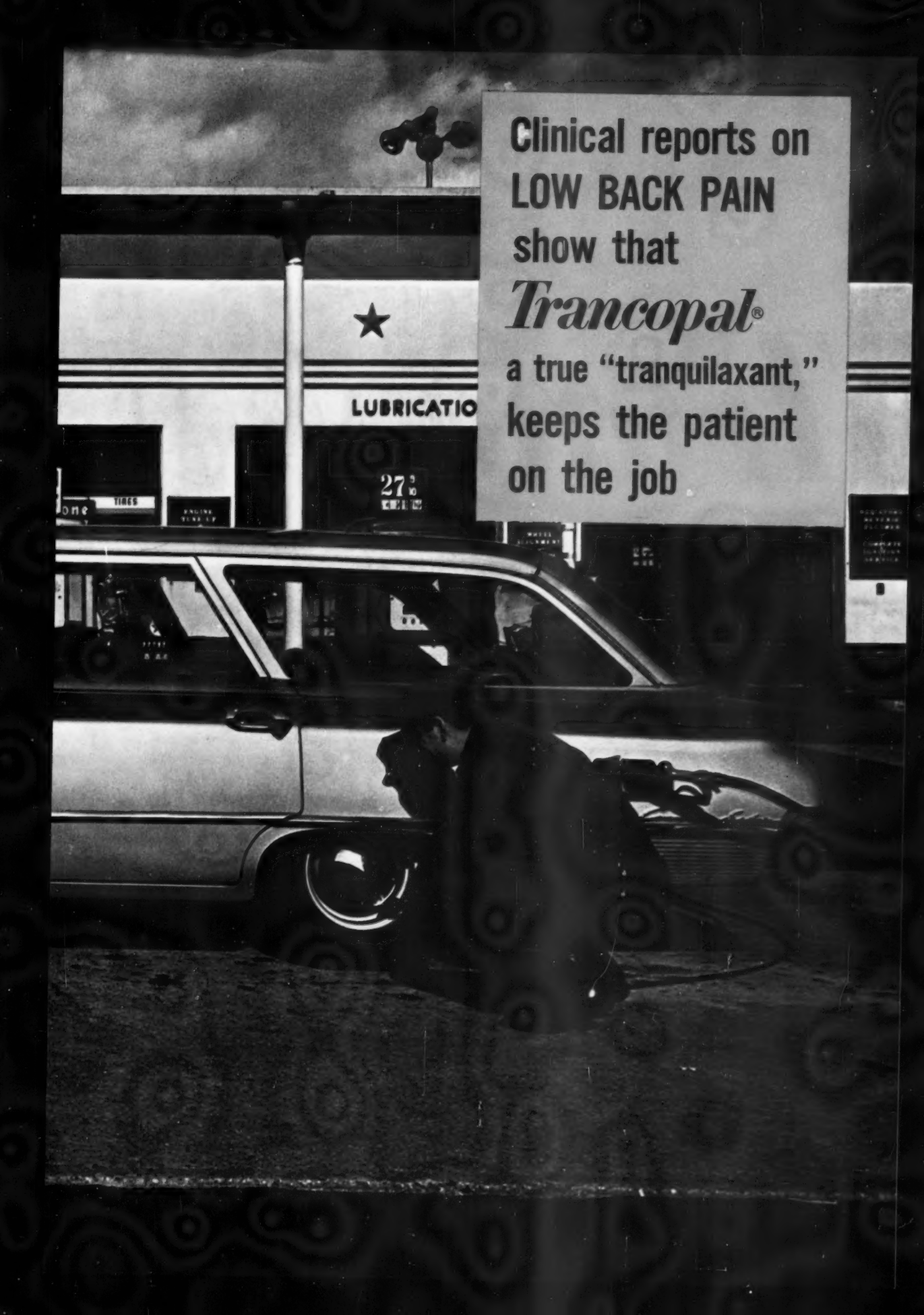
- Indications: Respiratory and circulatory stimulant for the aged and debilitated patient with symptoms of mental confusion, depression or atherosclerotic psychosis.

- Supplied: Bottles of 42 Tablets (3 weeks' treatment)

* TEMPOTROL (Time Controlled Therapy)

COLUMBUS

PHARMACAL COMPANY
Columbus 16, Ohio



Clinical reports on
LOW BACK PAIN
show that

Trancopal®

a true "tranquilaxant,"
keeps the patient
on the job

Trancopal[®]

A TRUE "TRANQUILAXANT"



**relaxes skeletal muscle
spasm so the patient
can continue to work**

Clinical experience shows that Trancopal will enable your patients with low back pain to keep going strong. Lichtman¹ reports that 310 of his 331 patients treated with Trancopal obtained satisfactory relief. These patients were suffering from low back pain, stiff neck, postoperative muscle spasm or other skeletal muscle spasms associated with trauma, bursitis, osteoarthritis and rheumatoid arthritis. Mullin and Epifano² reported that Trancopal brought relief to all of 39 patients with skeletal muscle spasm. In these patients, who had suffered from trauma, bursitis, rheumatoid arthritis, osteoarthritis, and intervertebral disc syndrome, the effect of Trancopal was "... excellent and prompt..."² Gruenberg³ obtained marked relief with Trancopal in 258 of 304 patients with low back pain, torticollis, arthritis and other conditions associated with skeletal muscle spasm. Moderate relief was obtained in an additional group of 28 patients. Trancopal is a true "tranquilaxant" because "It combines the properties of tranquilization and skeletal muscle relaxation with no concomitant change in normal consciousness."⁴ Side effects have been few and minor — and in no case were they serious enough to warrant discontinuing the use of Trancopal.¹ "Trancopal is exceptionally safe for clinical use."³

relieves anxiety and tension so the patient can carry on



Trancopal is also an effective agent for patients in anxiety and tension states. According to recent clinical reports,^{1,5} it calms the patients but allows them to continue their work or other activity. Indeed, Lichtman found that his patients with anxiety "... were in many instances able to continue their normal activities where previously they had been considerably restricted..."¹ He observed that Trancopal brought good to excellent relief to 114 of 120 patients in anxiety states. Ganz,⁵ who noted good to excellent relief in 32 of 35 patients with globus hystericus, and in his entire series of 100 patients in anxiety or tension states, comments: "Chlormethazanone [Trancopal], by relieving the psychogenic symptoms, allows the patient to use his energies in a more productive manner in overcoming his basic problems."⁵

Relieves dysmenorrhea — Trancopal has also proved to be a useful medication in the treatment of patients with dysmenorrhea,^{1,4,6} probably producing its effect "... by means of a combination of muscle relaxant and tranquilizing actions."⁴

Indications

Musculoskeletal disorders		Psychogenic disorders
Low back pain (lumbago)	Ankle sprain, tennis elbow	Dysmenorrhea
Neck pain (torticollis)	Osteoarthritis	Premenstrual tension
Bursitis	Rheumatoid arthritis	Anxiety and tension states
Fibrositis	Disc syndrome	Asthma
Myositis	Postoperative muscle spasm	Angina pectoris
		Alcoholism

Dosage: Adults, 100 or 200 mg. orally three or four times daily. Relief of symptoms generally occurs promptly and lasts from four to six hours.

How Supplied: Trancopal Caplets® 100 mg. (peach colored, scored) and 200 mg. (green colored, scored), bottles of 100.

References: 1. Lichtman, A. L.: *Kentucky Acad. Gen. Pract. J.* 4:28, Oct., 1958. 2. Mullin, W. G., and Epifano, Leonard: *Am. Pract. & Digest Treat.* 10:1743, Oct., 1959. 3. Gruenberg, Friedrich: *Current Therap. Res.* 2:1, Jan., 1960. 4. Shanaphy, J. F.: *Current Therap. Res.* 1:59, Oct., 1959. 5. Ganz, S. E.: *J. Indiana M. A.* 52:1134, July, 1959. 6. Stough, A. R.: *J. Oklahoma M. A.* 52:575, Sept., 1959.

Winthrop

Laboratories • New York 18, New York

clinical reports on anxiety show that

A TRUE "TRANQUILAXANT"

Trancopal

quiets the psyche but leaves the patient alert

"...TRANCOPAL is a most valuable drug for relieving tension, apprehension and various psychogenic states."⁵



Winthrop Laboratories

DESIGN - PRINTED IN U.S.A.

Closed-Radio Broadcasts To Aid Medical Education

A new radio series will be started this autumn by the Radio Corporation of America for doctors only. Known as the Medical Radio System, it will provide special medical programs for physicians thirteen hours daily, six days each week. The medical network will cover 16 cities initially.

The programs will consist of concise reports on the latest research in many fields of medicine, broadcast at regular intervals and repeated three or more times daily so that the doctor who is not able to hear the original broadcast can receive the program at his convenience.

When the professional programs are not being aired, the system will provide selected music for the physician's waiting room.

TRANSMISSION OF PROGRAMS will be made over an FM multiplex subcarrier channel to specially built receivers in the physician's office. Only these special receivers will be able to pick up the broadcasts which will not interfere with regular local FM radio reception. A typical installation also will include a speaker for the physician's desk and one for his waiting room. When medical news and information are being transmitted, the waiting room speaker is automatically disconnected and a signal light on the physician's office speaker goes on to signify a medical program is beginning.

All programs will be prepared by recognized medical authorities.

Offer Film of AMA Meeting

Scientific highlights of the Dallas Clinical Meeting of the American Medical Association can be brought to life on the movie screen at meetings of county societies and hospital staffs.

The film's selected lectures, exhibits and discussions make an absorbing 25-minute presentation.

A copy may be reserved for a specific date by writing Film Library, AMA, 535 North Dearborn Street, Chicago 10, Illinois. No charge except return postage.

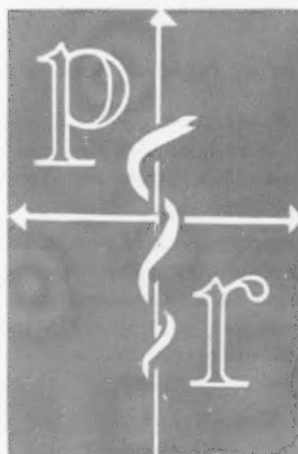
Genesee Aids Health Forums

For the first time in Flint, a Health Forum lecture series was co-sponsored for area residents by the Genesee County Medical Society and other health agencies.

The series of lectures was entitled, "Inside Line to a Long Life." The seventh program concluded the series on March 15.

National, state and local authorities appeared as speakers and

PUBLIC RELATIONS 541



panelists on topics including cancer, heart ailments, diabetes, alcoholism, tuberculosis, adolescent health problems and mental health.

Physician members of the Forum planning committee were Doctors Robert E. Anderson, Frederick W. Bald, Franklin W. Baske, Donald R. Bryant, and Clifford W. Colwell.

Exhibit at Ingham Home Show

March and April were busy months for Ingham doctors of medicine who participated in the Lansing Homorama Show and the 1960 Youth Talent Exhibition and Science Fair.

In March, the county medical society sponsored a 20-foot display of modern office equipment at the Homorama Show. Demonstrations of latest items of equipment were given by M.D.'s and medical assistants. No testing procedures were offered to the visiting public.

The Woman's Auxiliary helped the doctors staff the display booth and escort the visitors through the exhibit. Co-chairmen in charge of arrangements were T. D. Loughrin, M.D., and Hugo Saenz, M.D.

Expanding its participation in the 1960 Central Michigan Science Fair, the Ingham County Medical Society offered citations and savings bonds to winners of the various competitions. Edwin C. Sundell, M.D., youth activities subcommittee chairman, reports that the Society gave two \$25 savings bonds to winners in the junior division and contributed two \$25 bonds to top exhibitors in the field of medicine.

Both activities are under the general direction of the Public Relations Committee, D. Bonta Hiscoe, M.D., and James Neering, M.D., Co-Chairmen.

PAMPHLET OF THE MONTH

County medical society indoctrination committees may wish to obtain copies of the pamphlet "Science and Service to Humanity," outlining briefly the service and function of the American Medical Association. Quantities of this pamphlet for distribution to new members may be obtained by writing PR Library, MSMS, Box 539, Lansing 3. Also available from the Library are indoctrination kits for new members, prepared by MSMS.

"First Contact"

New PR Library Film

Newest film in the MSMS Public Relations Library is "First Contact: The Medical Assistant."

This 16 mm. sound and color motion picture was produced by the American Association of Medical Assistants in co-operation with the American Medical Association. It points out the many differences between a good medical assistant and a "poor substitute," and shows how the AAMA helps its members to become more valuable allies as the doctors' public relations ambassadors. Running time: 26 minutes.

To obtain this film for showing to your county medical society, medical assistants society, or other interested groups, write MSMS Public Relations Library, Box 539, Lansing 3.

MSMS policies affect the health of 8,000,000 people in Michigan.

for therapy of overweight patients

- **d-amphetamine**
depresses appetite and elevates mood
- **meprobamate**
eases tensions of dieting
(yet without overstimulation, insomnia
or barbiturate hangover)

• •
BAMADEx
MEPROBAMATE WITH D-AMPHETAMINE SULFATE LEDERLE

is a logical combination in appetite control

Each coated tablet (pink) contains: meprobamate, 400 mg.; d-amphetamine sulfate, 5 mg.
Dosage: One tablet one-half to one hour before each meal.



LEDERLE LABORATORIES
A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

Roerig Announces...

THE
ORALLY
MAXIMAL
PENICILLIN

MAXIPEN

phenoxymethyl penicillin potassium

THE ORALLY MAXIMAL PENICILLIN

Maximal Absorption

Acid stable, highly soluble

Maximal Blood Levels

Maximal Flexibility

May be administered without regard to meals. However, highest absorption is achieved when taken just before or between meals.

Maximal Oral Indications

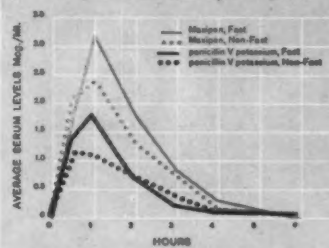
Indicated in infections caused by streptococci, pneumococci, susceptible staphylococci, and gonococci

DOSEAGE: For moderately severe conditions, 125 to 250 mg. three times daily. For more severe conditions, 500 mg. as often as every four hours around the clock.

NOTE: To date, MAXIPEN has not shown less allergic reactions than older oral penicillins. Usual precautions regarding penicillin administration should be observed.

SUPPLIED: MAXIPEN TABLETS, scored, 125 mg. (200,000 units), bottles of 36; 250 mg. (400,000 units), bottles of 24 and 100 tablets. MAXIPEN FOR ORAL SOLUTION; re-constituted each 5 cc. contains 125 mg. (200,000 units), in 60 cc. bottles.

COMPARATIVE ORAL SERUM LEVELS*
Fasting and Non-Fasting States / 250 Mg. Dose



*Based on 3294 individual serum antibiotic determinations. Complete details available on request.

MAXIPEN, the orally maximal penicillin, is a triumph of man over molecule; a product of Pfizer Research



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Science for the World's Well-Being

*The first synthetic penicillin
available
for general clinical use*

FOR YOUR NEXT PATIENT WHERE PENICILLIN IS INDICATED .

SYNOC

*PEAK BLOOD
LEVELS
HIGHER THAN
POTASSIUM
PENICILLIN V*

*ORAL ROUTE PROVIDES
HIGHER INITIAL PEAK
BLOOD LEVELS THAN
INTRAMUSCULAR
PENICILLIN G*

*IMPROVED
ANTIBIOTIC
ACTION FROM
ISOMERIC
COMPLEMENTARITY*



CONSIDER THESE 6 IMPORTANT THERAPEUTIC ATTRIBUTES OF

*ILLIN*TM

potassium phenethicillin (POTASSIUM PENICILLIN-152)

*ANTIBIOTIC
ACTIVITY
DIRECTLY
PROPORTIONAL
TO ORAL DOSE*

*REDUCED
RATE OF
INACTIVATION
BY STAPH
PENICILLINASE*

*SOME STAPH
STRAINS MORE
SENSITIVE TO
SYNCILLIN
IN VITRO*



FOR HIGHLY EFFECTIVE THERAPY
OF THE LARGE VARIETY OF INFECTIONS
CAUSED BY SUSCEPTIBLE PATHOGENS...NEW

SYNC

*Significance of
complementary
action of isomers
in SYNCILLIN*

The antibiotic effect of the clinically available mixture, SYNCILLIN, is greater than that of either of its two component isomers alone against many important pathogens, including some penicillin-resistant staphylococci. This phenomenon has been described as *Isomeric Complementarity*.

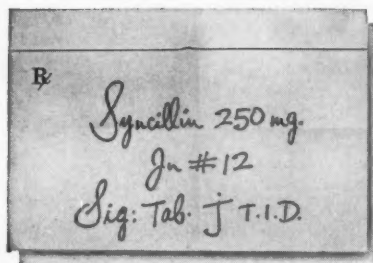
*Significance of
higher blood
levels with
SYNCILLIN*

Higher blood levels may be of value with organisms of only moderate penicillin sensitivity where doubling the blood concentration may be essential for effective bactericidal action. In addition, these higher levels may be necessary where there is infection in areas with a poor blood supply. Under these circumstances a higher blood concentration may provide the increased diffusion pressure required to deliver adequate amounts to the tissue. Also, antibiotic activity of SYNCILLIN is directly proportional to oral dosage. Increasing the dosage may, therefore, enhance the drug's effectiveness in certain cases.

*Efficacy of
SYNCILLIN
against staphylococci
and other
resistant organisms*

Studies have shown that SYNCILLIN is effective *in vitro* against a higher percentage of hospital "staph" strains, than penicillin G and penicillin V.^{1,2} Therefore, if clinical judgment indicates the use of penicillin, SYNCILLIN might be expected to be somewhat more effective. However, since some strains are still resistant to SYNCILLIN as well as to the other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment.

There have recently been reports of decreased efficacy of penicillin in streptococcal³ and gonococcal^{4,5} infections. The emergence of penicillin-resistant gonococci appears to be associated with an increase in the incidence of gonorrhea all over the world. When a less sensitive strain is encountered the higher blood levels produced by SYNCILLIN may be most helpful.



major therapeutic advantages accompany molecular asymmetry

ILLINTM

potassium phenethicillin (POTASSIUM PENICILLIN-152)

*Relation of
intermittent
high blood levels
of SYNCILLIN
to antibacterial
efficacy*

SYNCILLIN, like all clinically available penicillins, is bactericidal. Periodic high blood concentrations may be sufficient to permit complete eradication of sensitive pathogens. According to Eagle,⁶ "Soon after penicillin attains effective concentrations, the bacteria cease multiplying; and the bacteriostatic effect persists for a number of hours after penicillin has fallen to concentrations that are wholly ineffective. . . . The therapeutic significance of this postpenicillin recovery period is enhanced by the fact that the recovering bacteria, damaged but not killed by the previous exposure to penicillin, are abnormally susceptible to the host defenses. In consequence, the bactericidal process *in vivo* continues for many hours after the drug itself has fallen to ineffective concentrations."

*Reduced rate of
inactivation
of SYNCILLIN
by staph
penicillinase*

Bacterial resistance to penicillin has been attributed to the action of penicillin-inactivating enzymes produced by the invading organisms. SYNCILLIN is less affected by staphylococcal penicillinase than either of its component isomers. Further, SYNCILLIN is shown to be more slowly inactivated by this enzyme than penicillin V or penicillin G. Penicillinase from *B. cereus* likewise inactivates SYNCILLIN less rapidly than penicillin V or G.

Indications: SYNCILLIN is recommended in the treatment of infections caused by pneumococci, streptococci, gonococci, corynebacteria, and penicillin-sensitive staphylococci. In addition, SYNCILLIN is effective *in vitro* against certain strains of staphylococci resistant to other penicillins. SYNCILLIN, like other oral penicillins, is not recommended at the present time in deep-seated or chronic infections, subacute bacterial endocarditis, meningitis, or syphilis.

Dosage: 125 mg. or 250 mg. three times daily, depending on the severity of infection. Larger doses (e.g., 500 mg. t.i.d.) may be used for more severe infections. SYNCILLIN may be administered without regard to meals. Beta hemolytic streptococcal infections should be treated with SYNCILLIN for at least ten days.

Precautions: At the present time it is not possible to draw definite conclusions regarding the incidence of allergenicity to SYNCILLIN or its cross-allergenicity with natural penicillins. Therefore, the usual precautions for oral penicillin therapy should always be observed. Patients with histories of asthma, hay fever, urticaria, or previous reactions to penicillin should be watched with special care. Administration of oral penicillin, in rare instances, may provoke acute anaphylaxis, particularly in penicillin-sensitive individuals.

Diarrhea has been reported occasionally following heavy dosage. If this occurs, lengthen the interval between dosages.

If superinfection occurs during therapy, appropriate measures should be taken. Since some strains of staphylococci are resistant to SYNCILLIN as well as to other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment. As is true with all antibiotics, clinical response does not always correlate with laboratory bacterial sensitivity reports.

Supply: 125 and 250 mg. tablets, bottles of 25 and 100. 125 mg. powder for oral solution, 60 ml. vials.

References: 1. Wright, W. W.: Microbiology Report to Bristol Laboratories Inc. 2. Morigi, E. M. E.; Wheatley, W. B., and Albright, H.: Paper presented at the Seventh Antibiotic Symposium, November 4-6, 1959, Washington, D.C. 3. Editorial: New England J. Med. **261**:305 (Aug. 6) 1959. 4. King, A.: Lancet **1**:651 (March 29) 1958. 5. Epstein, E.: J.A.M.A. **169**:1055 (March 7) 1959. 6. Eagle, H. and Muselman, A. D.: J. Bact. **58**:475, 1949.



APRIL, 1960

BRISTOL LABORATORIES, Division of Bristol-Myers Company, SYRACUSE, NEW YORK

Say you saw it in the Journal of the Michigan State Medical Society



make mine Soyalac

Provides balanced nutritional values

- ① Fibre-free **HYPOALLERGENIC** formula.
- ② An excellent formula for regular infant feeding.
- ③ An ideal food for milk allergies, eczema and problem feeding.

SOYALAC helps solve the feeding problem of prematures and infants requiring milk-free diet.

Strikingly similar to mother's milk in composition and ease of assimilation, babies thrive on SOYALAC.

Clinical data furnish evidence of SOYALAC'S value in promoting growth and development.

Protein of high biologic value is obtained from the soybean by an exclusive process.

Free Booklet and Samples

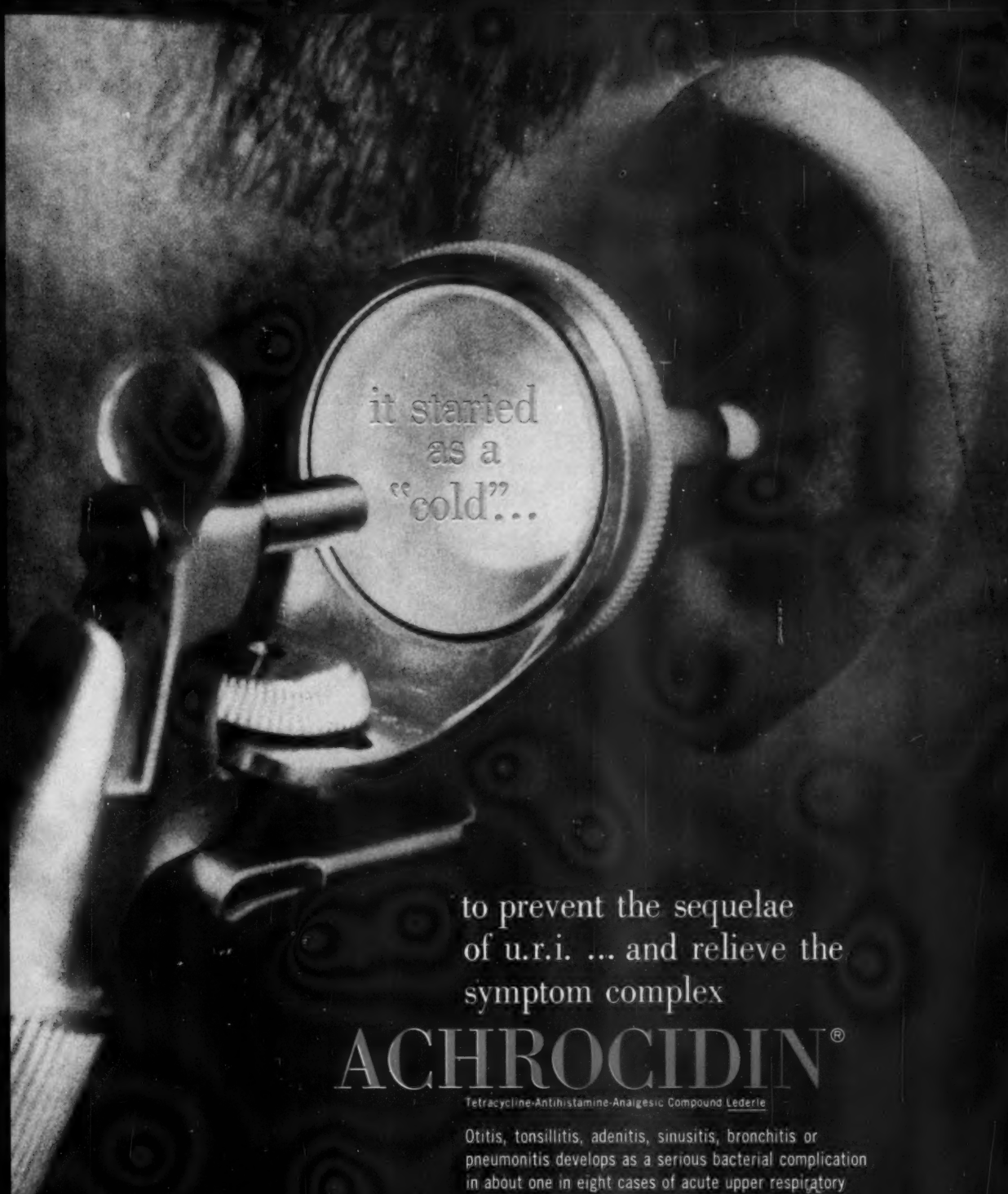
A request on your professional letterhead or prescription form will bring to you complete information, and a supply of samples. Please address the Loma Linda Food Company, Arlington, California, or Mount Vernon, Ohio.

Medical Products Division

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it started
as a
"cold"...

to prevent the sequelae
of u.r.i. ... and relieve the
symptom complex

ACHROCIDIN®

Tetracycline-Antihistamine-Analgesic Compound Lederle

Otitis, tonsillitis, adenitis, sinusitis, bronchitis or pneumonitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.¹ To protect and relieve the "cold" patient... ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: *Am. J. Hygiene* 71:122 (Jan.) 1933



LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

Q. *When you want to reduce serum cholesterol and maintain it at a low level, is medication more realistic than dietary modifications?*

a. *Maintenance of lowered cholesterol concentration in the blood is a life-long problem. It is usually preferable, therefore, to try to obtain the desired results through simple dietary modification. This spares the patient added expense and permits him meals he will relish.*

The modification is based on a diet to maintain optimum weight plus a judicious substitution of the poly-unsaturated oils for the saturated fats. One very simple part of the change is to cook the selected foods with poly-unsaturated Wesson. In the prescribed diet, this switch in type of fat will help to lower blood serum cholesterol and help maintain it at low levels. The use of Wesson permits a diet planned around many favorite and popular foods. Thus the patient finds it a pleasant, easy matter to adhere to the prescribed course.

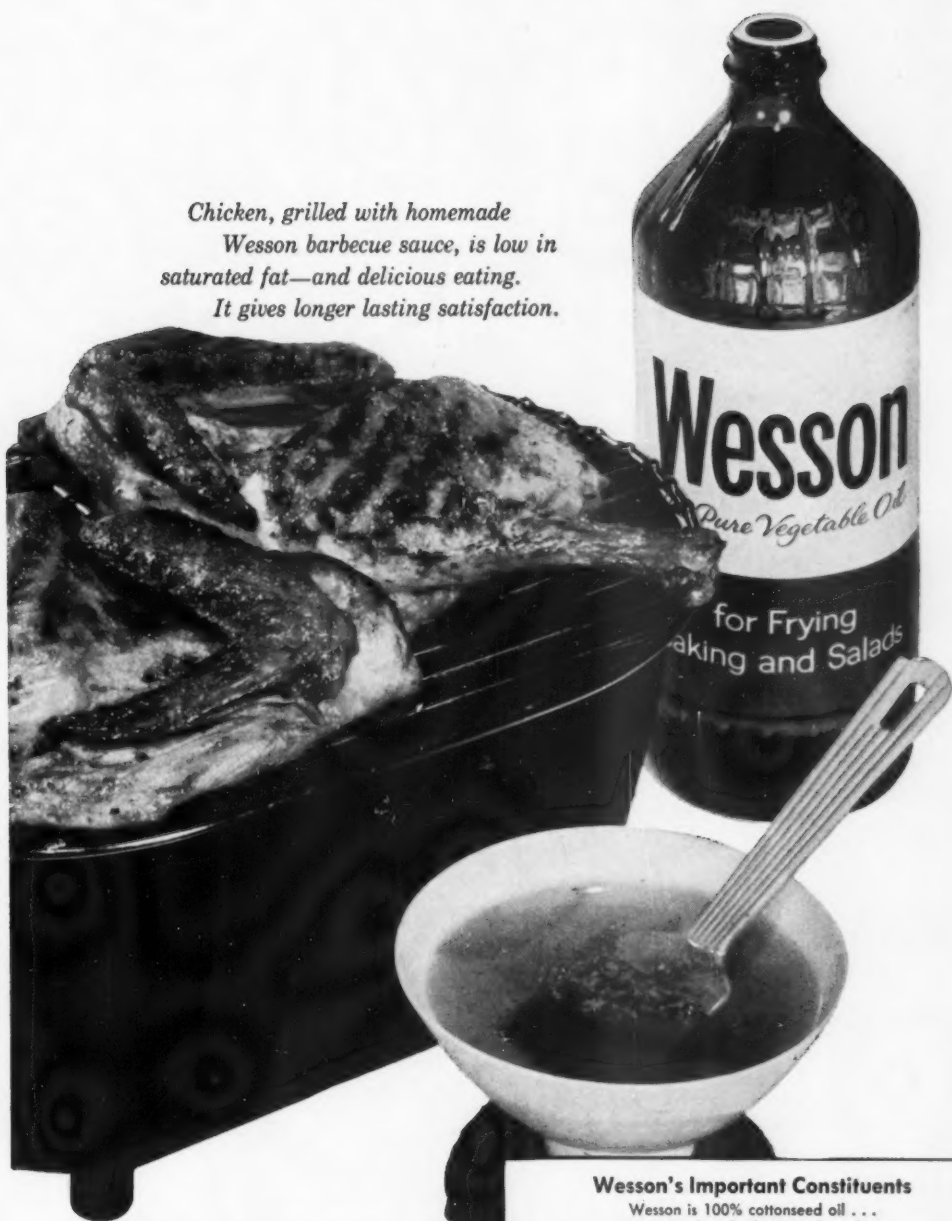


Where a vegetable (salad) oil is medically recommended for a cholesterol depressant regimen, Wesson is unsurpassed by any readily available brand.

Uniformity you can depend on. Wesson has a poly-unsaturated content better than 50%. Only the lightest cottonseed oils of highest iodine number are selected for Wesson. No significant variations are permitted in the 22 exacting specifications required before bottling.

Wesson satisfies the most exacting appetites. To be effective, a diet must be eaten by the patient. The majority of housewives prefer Wesson particularly by the criteria of odor, flavor (blandness) and lightness of color. (Substantiated by sales leadership for 59 years and reconfirmed by recent tests against the next leading brand with brand identification removed, among a national probability sample.)

*Chicken, grilled with homemade
Wesson barbecue sauce, is low in
saturated fat—and delicious eating.
It gives longer lasting satisfaction.*



FREE Wesson recipes, available in quantity for your patients, show how to prepare meats, seafoods, vegetables, salads and desserts with poly-unsaturated vegetable oil. Request quantity needed from The Wesson People, Dept. N., 210 Baronne St., New Orleans 12, La.

Wesson's Important Constituents

Wesson is 100% cottonseed oil . . .
winterized and of selected quality

Linoleic acid glycerides (poly-unsaturated)	50-55%
Oleic acid glycerides (mono-unsaturated)	16-20%
Total unsaturated	70-75%
Palmitic, stearic and myristic glycerides (saturated)	25-30%
Phytosterol (predominantly beta sitosterol)	0.3-0.5%
Total tocopherols	0.09-0.12%
Never hydrogenated—completely salt free	
Each pint of Wesson contains 437-524 Int. Units of Vitamin E	

"life
saving"
in many cases...



KANTREX[®]

INJECTION

Kanamycin Sulfate Injection

...a highly potent,
bactericidal antibiotic
for combating staph and
gram negative infections

...well tolerated when
used on a properly individ-
ualized dosage schedule
which does not induce
excessive blood levels

"In many instances its effect has been dramatic and life saving ..."

"Six of the patients who survived were considered to be terminally ill at the time kanamycin was started but showed dramatic improvement and eventual complete recovery."

"...indeed, the results [with kanamycin] are the most remarkable ever achieved with otherwise fatal staphylococcal infections that we have ever seen."

"There appears to be no doubt that kanamycin has been lifesaving in those instances in which organismal resistance precludes the use of other antimicrobials."

*Information on dosage, administration and precautions
contained in package insert or available on request.*

SUPPLY: KANTREX Injection, 0.5 Gm. kanamycin (as sulfate) in vial containing 2 ml. volume.
KANTREX Injection, 1.0 Gm. kanamycin (as sulfate) in vial containing 3 ml. volume.

REFERENCES: 1. Yow, E. M.: Practitioner 182:759, 1959. 2. Yow, M. D., and Womack, G. K.: Ann. N. Y. Acad. Sci. 76:363, 1958. 3. Bunn, P. A., Balch, A., and Krajnyak, O.: Ibid. 76:109, 1958. 4. Council on Drugs, J.A.M.A. 172:699, 1960.

BRISTOL LABORATORIES, SYRACUSE, NEW YORK

IN CONTRACEPTION...



WHY IS SPEEDIER SPERMICIDAL ACTION IMPORTANT?

Because a swift-acting spermicide best meets the variables of spermatozoan activity.

Lanesta Gel, "...found to immobilize human spermatozoa in one-third to one-eighth the time required by five of the leading contraceptive products currently available . . ."* thus provides the *extra* margin of assurance in conception control. The accelerated action of Lanesta Gel — it kills sperm in minutes instead of hours — may well mean the difference between success and failure.

*Berberian, D. A., and Slighter, R. G.: *J.A.M.A.* 168:2257 (Dec. 27) 1958.

In Lanesta Gel 7-chloro-4-indanol, a new, effective, nonirritating, nonallergenic spermicide produces immediate immobilization of spermatozoa in dilution of up to 1:4,000. Spermicidal action is greatly accel-

erated by the addition of 10% NaCl in ionic form. Ricinoleic acid facilitates the rapid inactivation and immobilization of spermatozoa and sodium lauryl sulfate acts as a dispersing agent and spermicidal detergent.

Lanesta Gel with a diaphragm provides one of the most effective means of conception control. However, whether used with or without a diaphragm, the patient and you, doctor, can be certain that Lanesta Gel provides faster spermicidal action — plus essential diffusion and retention of the spermicidal agents in a position where they can act upon the spermatozoa.



new Lanesta® Gel

Supplied: Lanesta Exquiset . . . with diaphragm of prescribed size and type; universal introducer; Lanesta Gel, 3 oz. tube, with easy clean applicator, in an attractive purse. Lanesta Gel, 3 oz. tube with applicator; 3 oz. refill tube — available at all pharmacies.

Manufactured by Esta Medical Laboratories, Inc., Alliance, Ohio Distributed by GEORGE A. BREON & Co., New York 18, N. Y.

A product
of Lanteen®
research.

make
them
measure up



Incremin[®] with iron Syrup

Lysine-Vitamins Lederle

help restore the normal blood picture—iron as ferric pyrophosphate to restore or maintain normal hemoglobin.

boost appetite and energy—vitamins . . . B₁, B₆ and B₁₂.

upgrade low-grade protein—cereals and other low protein favorites of children, upgraded by L-Lysine, work with meat and other top protein to build stronger bodies.

tastes good! Each daily cherry-flavored teaspoonful dose (5 cc.) contains:

L-Lysine HCl	300 mg.
Vitamin B ₁₂ Crystalline.....	25 mcgm.
Thiamine HCl (B ₁).....	10 mg.
Pyridoxine HCl (B ₆).....	5 mg.
Ferric Pyrophosphate (Soluble).....	250 mg.
Iron (as Ferric Pyrophosphate).....	30 mg.
Sorbitol	3.5 Gm.
Alcohol	0.75%

Bottles of 4 and 16 fl. oz.



LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



treats
seborrheic
dermatitis
as an
infectious
process
as well as
a cosmetic
problem



BETADINETM SHAMPOO

(active ingredient: Povidone-Iodine)

established in 1905
TAILBY-NASON COMPANY, INC.
DOVER, DELAWARE



THE SEBORRHEIC STATE IS ALWAYS FOUND ASSOCIATED WITH BACTERIAL AND YEAST INFECTION. A TRUE ANTIDANDRUFF PREPARATION MUST BE CAPABLE OF DESTROYING THESE MICROORGANISMS!

- kills pathogens on contact
- effective adjunctive therapy in severe pyoderma²
- safe, nontoxic, nonirritating, nonsensitizing
- rich golden lather, pleasantly scented, leaves hair easy-to-manage

1. Spoor, H.: Proc. Scient. Sec. TGA No. 31, May 1959
2. Frank, L.: New York J. Med. 59:2892, 1959

*for
the
tense
and
nervous
patient*



relief comes fast and comfortably

- does not produce autonomic side reactions
- does not impair mental efficiency, motor control, or normal behavior
- has not produced hypotension, Parkinson-like symptoms, agranulocytosis or jaundice

Usual Dosage: One or two 400 mg. tablets t.i.d.

Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets or as MEPROTABS*—400 mg. unmarked, coated tablets.

Miltown[®]

meprobamate (Wallace)

*TRADE MARK



WALLACE LABORATORIES / New Brunswick, N. J.

CM-1118

in the low back syndrome



relieves both stiffness and pain with safety... sustained effect

In 100 consecutive patients with the low back syndrome, Kestler¹ reported that particularly gratifying was the ability of SOMA "to relax muscular spasm, relieve pain, and restore normal movement, thus speeding recovery in a large majority of the patients."

RESULTS WITH SOMA IN THE LOW BACK SYNDROME*



*Investigators' reports to the Medical Department, Wallace Laboratories. (Total of 278 cases)

NOTABLE SAFETY—extremely low toxicity; no known contraindications; side effects are rare; drowsiness may occur, usually at higher dosage

RAPID ACTION—starts to act quickly **SUSTAINED EFFECT**—relief lasts up to 6 hours

EASY TO USE—usual adult dosage is one 350 mg. tablet 3 times daily and at bedtime

SUPPLIED—as white, coated, 350 mg. tablets, bottles of 50; also available for pediatric use: 250 mg., orange capsules, bottles of 50


1. Kestler, O.: In *The Pharmacology and Clinical Usefulness of Carisoprodol*, Wayne State University Press, Detroit, 1959. 2. Berger, F. M.; Kleitzkin, M.; Ludwig, B. J.; Margolin, S., and Powell, L. S.: *J. Pharm. Exp. Ther.* 127:66 (Sept.) 1959. 3. Spears, C. E. and Phelps, W. M.: *Arch. Pediat.* 76:287 (July) 1959. 4. Phelps, W. M.: *Arch. Pediat.* 76:243 (June) 1959. 5. Friedman, A. P.; Frankel, K., and Fransway, R. L.: Papers presented at Scientific Meeting, New York State Society of Industrial Medicine, Inc., New York, Sept. 30, 1959. 6. Kuge, T.: Unpublished reports. 7. Ostrowski, J. P.: *Orthopedics* 2:7 (Jan.) 1960.

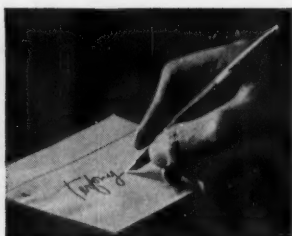
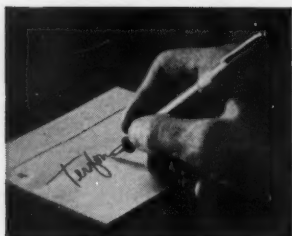
Literature and samples on request

Also available on request: *The Pharmacology and Clinical Usefulness of Carisoprodol*, Wayne State University Press, Detroit, 1959. (185 pages)

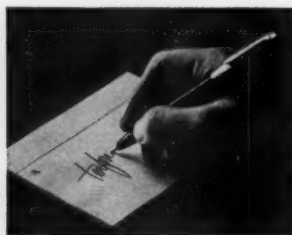
SOMATM

(carisoprodol Wallace)

 WALLACE LABORATORIES, New Brunswick, New Jersey



more and more physicians are prescribing this triple sulfa



TERFONYL

Squibb Triple Sulfas (Trisulfapyrimidines)

Clinical experience continues to prove that
TERFONYL provides many special advantages
fundamental to successful antibacterial therapy.

specificity for a wide range of organisms. superinfection rarely encountered. soluble in urine through entire physiologic pH range. minimal disturbance of intestinal flora. excellent diffusion throughout tissues. readily crosses blood-brain barrier. sustained therapeutic blood levels. extremely low incidence of sensitization

SUPPLY: Tablets, 0.5 gm. • Suspension, raspberry flavored, 0.5 gm. per teaspoonful (5cc.).

SQUIBB



Squibb Quality—the Priceless Ingredient

TERFONYL® IS A SQUIBB TRADEMARK

New AMA Commission to Study Costs of Medical Care

"We would like to find where medical care economies may be achieved in the best interests of the patient."

That statement was made by Louis M. Orr, M.D., president of AMA, when he recently explained the establishment of the new AMA Commission on the Costs of Medical Care.

The AMA appropriated an initial grant of \$100,000 for the broad Commission assignment to delve into every phase of medicine where costs or spending are involved.

DOCTOR ORR STRESSED that "This study-project is being launched because the American public is spending increasing amounts of money for all types of medical care. These expenditures involve the peoples' lives, health, and pocketbooks. The Commission will analyze the cost picture from every angle and try to come up with some sound advice and suggestions."

The Commission will study all medical care costs, including doctors' fees, hospital charges, nursing cost, drug expenditures, and health insurance premiums.

Doctor Orr said that American medicine is "tackling the cost problem in order to help people better meet their obligations when illness strikes, and to help clarify the confusion that exists relative to such cost."

THE AMERICAN MEDICAL ASSOCIATION, Dr. Orr said, is "well aware that more physician-patient relationships have been strained by a misunderstanding about fees than perhaps any other disagreement. Is such misunderstanding due to lack of frank discussion between doctor and patient, or is there some other reason? A patient has every right to know why he needs treatment or surgery, what it will consist of, and what it will cost—particularly where major services are rendered."

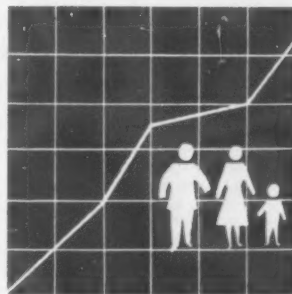
The AMA Commission will consult economists, health insurers, prepayment plans, hospital representatives, a cross section of patients, and others whose knowledge and opinions will be helpful.

Suggests Role of Profession In Reducing Hospital Costs

(This article is excerpted from the report of the Committee on Medical Economics of the Medical Society of the County of New York as adopted at a recent Society business meeting.)

"The medical profession and the medical societies are well aware of their responsibilities in keeping costs of hospitalization and premiums for hospitalization insurance to a minimum. It is obviously a job that they cannot do alone but they do not stand ready to co-operate actively with the other groups concerned and indeed to take the lead in getting the program under way.

SOCIO ECONOMICS '561



"Both from without and within the profession it has been stressed that medicine should accept leadership in these matters.

"It should be obvious that there is nothing to be gained by blaming any one group for the ever increasing cost of hospitalization insurance. A concerted detailed and continuing effort is needed if voluntary hospital insurance of this type is to survive and not be replaced by government subsidy.

These recommendations are made:

"1. County and state medical societies should use all their channels of communications to the profession to bring home to physicians their stake in and their role in preserving voluntary hospitalization insurance. In addition to the inevitable moralizing, there should be concrete suggestions made to physicians on the basis of definite criteria to be discussed below. It is suggested the public relations committee of each county medical society should handle this campaign unless there is an established committee for professional relations or professional education.

"2. County and state medical societies through their public relations committees should cooperate with hospital plan carriers in an intensive publicity campaign along the lines indicated above. The campaign to the public should emphasize a subject usually avoided by the carriers; that there are restrictions on the insurance they sell and that these restrictions will be enforced.

"3. Joint committees should be established, at whatever level is best suited to the community, to consist of representatives of the medical society, hospitalization and health insurance carriers and both voluntary and proprietary hospitals through their respective organizations. These committees should meet regularly to explore the following questions.

- "(a) The establishment of Admission, Discharge and Conduct Committees at hospitals. Their composition, aims and specific function.
- "(b) Evaluation of hospital facilities and organization with the object of the eventual recognition of different grades of care with different rates of payment to the hospital.
- "(c) Evaluation of laboratory and other "ancillary" facilities in hospital, so that patients need not be kept in longer than necessary while waiting for laboratory, x-ray or physio-therapeutic services.
- "(d) Investigation of the possibility of rendering certain services on an out-patient rather than an in-hospital basis. This applies particularly to the field of minor surgery.
- "(e) Elaborate criteria applying to proper utilization so that individual physicians and hospital committees may have a yardstick for comparison.

"4. It would be well for the medical societies and the insurance carriers to consider whether or not the time-honored exclusion of diagnostic services might not be re-evaluated in the light of savings effected by tighter operations.

* * *

MSMS prides itself that no member has ever been refused his "day in court"—an opportunity to be heard, regardless of the subject.

Public Spends Twice as Much For Fun, Alcohol, Tobacco As for Medical Care

Americans are spending twice as much money for recreation, alcoholic beverages and tobacco as they are for medical care. Two of every \$18 the public spends for its personal needs goes for recreation, alcohol or tobacco compared to an expenditure for medical care of one of \$18.

These statements are based on 1958 figures released by the U. S. Department of Commerce.

Americans spent \$293 billion on their personal needs, the Department reports. Seventeen billion dollars of this sum (or 5.8 per cent) was spent for recreation while \$9.2 billion (3.1 per cent) went for alcohol and \$6.3 billion (2.1 per cent) was used to purchase tobacco products, for a total of \$32.5 billion, or 11 per cent of total personal consumption expenditures.

In comparison to the \$32.5 billion, \$16.4 billion (5.6 per cent) was spent on medical care. Other public expenditures in 1958 included \$67 billion for food, \$38 billion for housing, nearly \$34 billion for transportation, \$32 billion for clothing, accessories and jewelry, almost \$4 billion for religious and welfare activities, and \$3.4 billion for education and research.

The distribution of each dollar spent for medical care changed sharply in the period from 1938 to 1958.

In 1958, physicians and dentists received a smaller share of the medical care dollar than they did in 1938, while hospitals, medicines and appliances received a larger share.

From each dollar of the \$2.7 billion spent for medical care in 1938, physicians received 30 cents, but by 1958 doctors were getting only 26 cents.

An even sharper drop was experienced by dentists, whose share of 15 cents was reduced to 10 cents.

The slack was taken up by hospitals, medicines and appliances. Twenty-two cents out of every medical care dollar spent in 1938 was for hospital services; but by 1958, this slice of the dollar was up to 31 cents. Hospitals attribute this rise to the expansion of hospital services and greater utilization which has increased the number and variety of skilled personnel required.

NY Blue Cross to Cover Costs of Home Care

A new "home care" program, which provides continuation of hospital services to the subscriber in his home—at no additional cost—is being put into opera-

(Continued on Page 566)



for the acute asthmatic attack elixir **synophylate**[®]

(Theophylline Sodium Glycinate)

RAPID ORAL CONTROL WITHOUT G.I. IRRITATION

ELIXIR SYNOPHYLATE relieves wheezing and dyspnea in 5 to 10 minutes after a single dose. Significant blood levels are achieved in 15 minutes, persisting for at least 4 hours.

Because of its built-in buffer, theophylline sodium glycinate [SYNOPHYLATE] is "tolerated in larger doses than are possible with other theophylline preparations,"¹ including aminophylline.¹⁻³

the most potent theophylline elixir available... may avoid need for I.V. injection

1. A. M. A. Council on Drugs: New and Nonofficial Drugs 1959, Philadelphia, Lippincott, 1959, p. 389. 2. United States Dispensatory (Osol-Farrar), ed. 25, Philadelphia, Lippincott, 1955, p. 1412. 3. Grollman, A.: Pharmacology and Therapeutics, ed. 3, Philadelphia, Lea & Febiger, 1958, p. 206.

Each tablespoonful (15 ml.) contains 0.33 Gm. (5 gr.) equivalent to 0.16 Gm. (2½ gr.) Theophylline U.S.P. Supplied: Bottles of 1 pint and 1 gallon.

Literature on request.

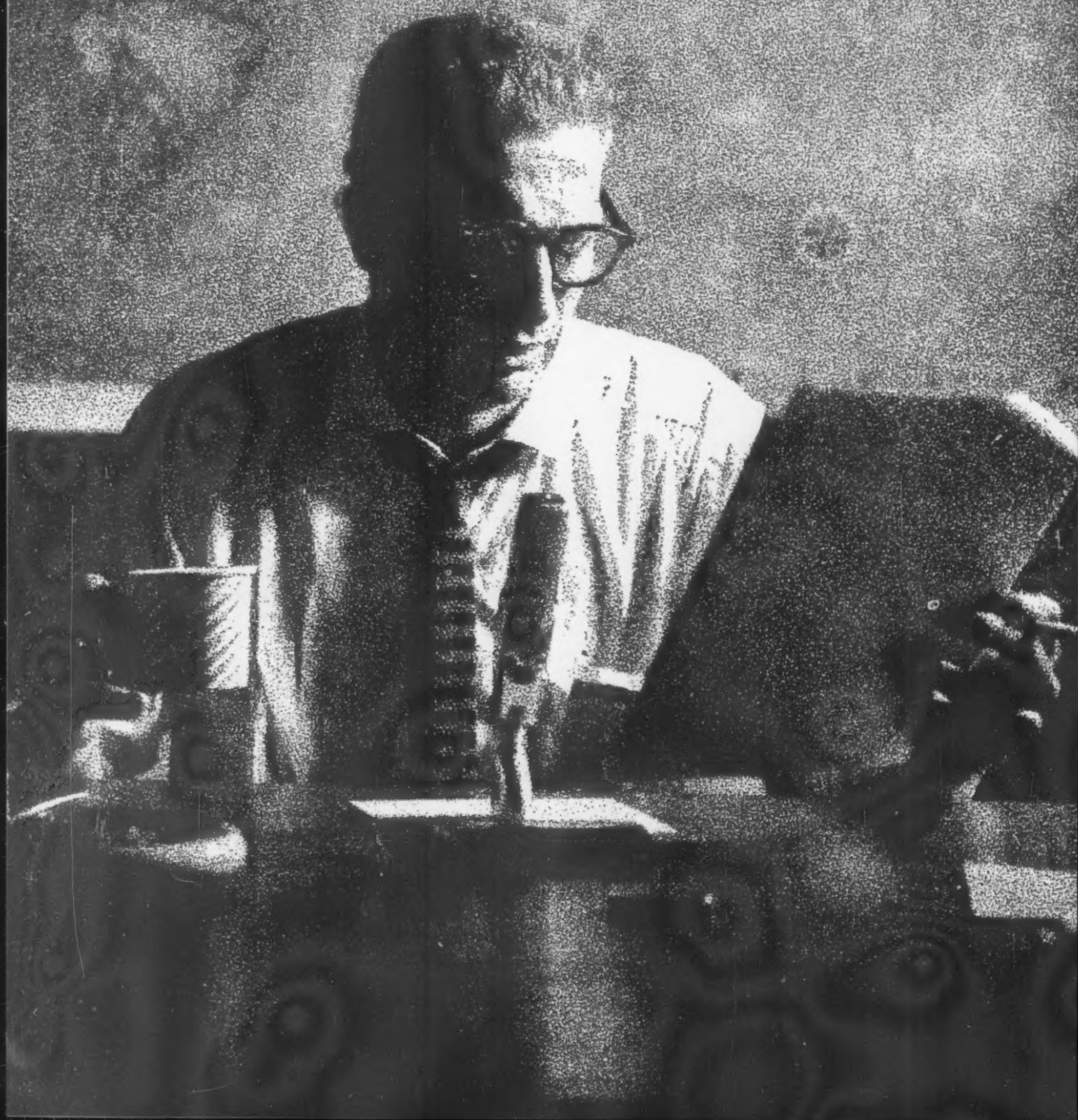
...particularly useful for children

Products Born of Continuous Research



THE CENTRAL PHARMACAL COMPANY Seymour, Indiana

control the tension—treat the trauma



...Pathibamate®⁴⁰⁰ ²⁰⁰

meprobamate with PATHILON® tridihexethyl chloride Lederle

*greater flexibility in the control of tension, hypermotility
and excessive secretion in gastrointestinal dysfunctions*

PATHIBAMATE combines two highly effective and well-tolerated therapeutic agents:

meprobamate (400 mg. or 200 mg.) widely accepted tranquilizer and . . .

PATHILON (25 mg.)—anticholinergic noted for its peripheral, atropine-like action, with few side effects.

The clinical advantages of **PATHIBAMATE** have been confirmed by nearly two years' experience in the treatment of duodenal ulcer; gastric ulcer; intestinal colic; spastic and irritable colon; ileitis; esophageal spasm; anxiety neurosis with gastrointestinal symptoms and gastric hypermotility.

Two dosage strengths—**PATHIBAMATE-400** and **PATHIBAMATE-200** facilitate individualization of treatment in respect to both the degree of tension and associated G.I. sequelae, as well as the response of different patients to the component drugs.

Supplied: **PATHIBAMATE-400**—Each tablet (yellow, 1/2-scored) contains meprobamate, 400 mg.; **PATHILON** tridihexethyl chloride, 25 mg.

PATHIBAMATE-200—Each tablet (yellow, coated) contains meprobamate, 200 mg.; **PATHILON** tridihexethyl chloride, 25 mg.

Administration and Dosage: **PATHIBAMATE-400**—1 tablet three times a day at mealtime and 2 tablets at bedtime.

PATHIBAMATE-200—1 or 2 tablets three times a day at mealtime and 2 tablets at bedtime.

Adjust to patient response.

Contraindications: glaucoma; pyloric obstruction, and obstruction of the urinary bladder neck.



LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

NY Blue Cross

(Continued from Page 562)

tion by Associated Hospital Service of New York (Blue Cross).

The plan is expected to start this spring in three or four hospitals and will be gradually extended to others. Exemplifying national interest in the program was Michigan Blue Cross's announcement that it had started a study based on the new concept.

Basically, the New York program offers an extension of hospital services into the home for any medical or surgical patient in the post-acute stage, without restriction as to age, nature or duration of illness, or type of hospital accommodation occupied. The private physician will decide when to utilize the service, according to criteria set by each hospital's home-care council and Blue Cross.

Home care will be provided by existing visiting nurse agencies. When feasible, the services of physical therapists and social workers will be made available. Hospital services will include laboratory tests, drugs, dressings, ambulance service, and x-rays.

Offer Hospital Credit Cards

The board of trustees of the Pontiac General Hospital voted in January to establish a credit-card plan for hospital costs. Surgeon's fees will not be included; but hospital costs will include x-rays and lab work.

Harold B. Euler, hospital administrator, has explained that the credit cards will entitle holders to receive treatment and occupy hospital beds on a service-now-pay-later basis. Credit-card applications will be checked by the Pontiac Credit Bureau.

The plan, he explained, will especially help the 10 per cent of the hospital patients who are not covered by hospitalization insurance.

The Pontiac plan, according to Mr. Euler, is the first hospital credit plan in Michigan, although more popular in St. Louis and New Jersey.

AMEF Contributions Up

During 1959, there was a marked increase in funds contributed by physicians to medical education through the American Medical Education Foundation.

The Foundation closed the 1959 books on January 31, 1960, with a total of \$1,195,824, an increase of \$75,780 over the 1958 total which included a gift from the American Medical Association of \$100,000. The total increase in contributed money, therefore, is \$175,780 or a 17.2 per cent increase over the contributed amount of the preceding year, not including the AMA grant. The two-year increase in the actual amount of contributions, discounting AMA grants, is an extraordinary 36.7 per cent.

Estimate Annual Loss Of Income Due to Illness

More than 500,000,000 days of work are lost each year as a result of illness. And the annual wage loss due to illness is estimated at \$4,200,000,000.

This report is made by the publication, "Patterns of Disease," January number.

An estimated 10 per cent of this loss, or \$420,000,000 yearly, may be due to illnesses of occupational origin.

Every year about 200 disease entities are added to recognized occupational diseases, presently numbering about 3,000. Most new disease entities are caused by new chemical compounds introduced by industry at the rate of one every 24 minutes. Of these, a significant number possess properties potentially harmful to workmen.

The AMA Council on Industrial Health defines occupational health as essentially preventive medicine—health protection and promotion—in the working environment. Its objectives are twofold: (1) detection, evaluation, and correction of hazards to health imposed by environment and materials of work, and (2) medical examination of employees to effect suitable job placement and to discover health impairments caused by work surroundings. Ideally, health education and counseling are included.

a
logical
prescription
for
overweight patients

meprobamate plus d-amphetamine


...depresses appetite...elevates mood...eases
tensions of dieting...without overstimulation,
insomnia, or barbiturate hangover.

anorectic-ataractic

BAMADEx[®]

MEPROBAMATE WITH D-AMPHETAMINE SULFATE LEDERLE

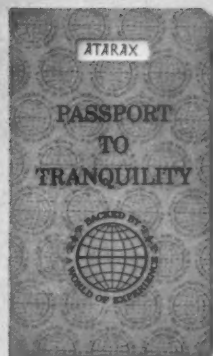
Each coated tablet (pink) contains: meprobamate, 400 mg.; d-amphetamine sulfate, 5 mg.
Dosage: One tablet one-half to one hour before each meal.



LEDERLE LABORATORIES
A Division of AMERICAN CYANAMID COMPANY, Pearl River, N.Y.

A
GUIDE
TO

THE REALMS OF THERAPY BEST ATTAINED WITH



ATARAX

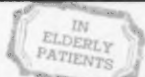
(brand of hydroxyzine)

World-wide record of effectiveness—over 200 laboratory and clinical papers from 14 countries.
 Widest latitude of safety and flexibility—no serious adverse clinical reaction ever documented.
 Chemically distinct among tranquilizers—not a phenothiazine or a meprobamate.
 Added frontiers of usefulness—antihistaminic; mildly antiarrhythmic; does not stimulate gastric secretion.

Special Advantages



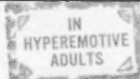
unusually safe; tasty syrup,
10 mg. tablet



well tolerated by debilitated
patients



useful adjunctive therapy for
asthma and dermatosis; particularly effective in urticaria



does not impair mental acuity

Supportive Clinical Observation

"... Atarax appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior..." Freedman, A. M.: *Pediat. Clin. North America* 5:573 (Aug.) 1958.

"... seems to be the agent of choice in patients suffering from removal disorientation, confusion, conversion hysteria and other psychoneurotic conditions occurring in old age." Smigel, J. O., et al.: *J. Am. Geriatrics Soc.* 7:61 (Jan.) 1959.

"All [asthmatic] patients reported greater calmness and were able to rest and sleep better... and led a more normal life.... In chronic and acute urticaria, however, hydroxyzine was effective as the sole medication." Santos, I. M., and Unger, L.: Presented at 14th Annual Congress, American College of Allergists, Atlantic City, New Jersey, April 23-25, 1958.

"... especially well-suited for ambulatory neurotics who must work, drive a car, or operate machinery." Ayd, F. J., Jr.: *New York J. Med.* 57:1742 (May 15) 1957.

...and for additional evidence

Bayart, J.: *Acta paediat. belg.* 10:164, 1956. Ayd, F. J., Jr.: *California Med.* 87:75 (Aug.) 1957. Nathan, L. A., and Andelman, M. B.: *Illinois M. J.* 112:171 (Oct.) 1957.

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SUPPLIES: Tablets, 10 mg., 25 mg., 100 mg.; bottles of 100. Syrup (10 mg. per tsp.), pint bottles. Parenteral Solution: 25 mg./cc. in 10 cc. multiple-dose vials; 50 mg./cc. in 2 cc. ampules.



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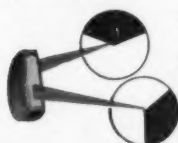
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1. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958.
2. Lhotka, F. M.: Illinois M. J.: 112:259 (Dec.) 1957.
3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.

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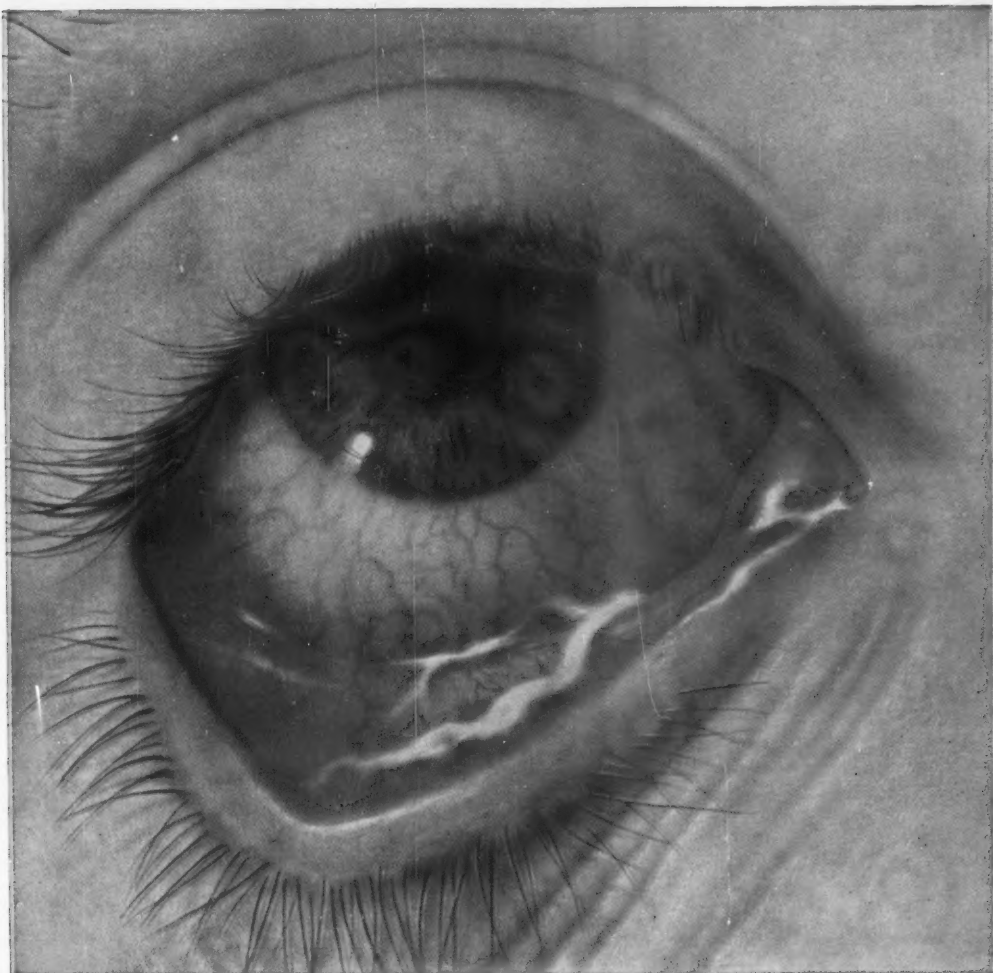
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1. Lippmann, O.: Arch. Ophth. 57:339, March 1957.
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References: 1. Ayd, F. J., Jr.: Bull. School Med., Univ. Maryland 44:29, 1959. 2. Azima, H., and Vispo, R. H.: A.M.A. Arch. Neurol. & Psychiat. 81:658, 1959. 3. Lehmann, H. E.; Cahn, C. H., and de Verteuil, R. L.: Canad. Psychiat. A. J. 3:155, 1958. 4. Mann, A. M., and MacPherson, A. S.: Canad. Psychiat. A. J. 4:38, 1959. 5. Sloane, R. B.; Habib, A., and Batt, U. E.: Canad. M.A.J. 80:540, 1959. 6. Straker, M.: Canad. M.A.J. 80:546, 1959. 7. Strauss, H.: New York J. Med. 59:2906, 1959.

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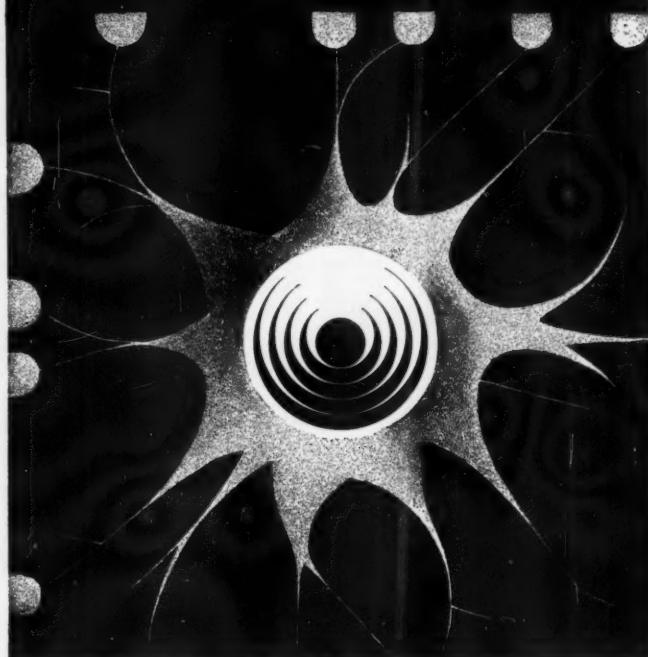


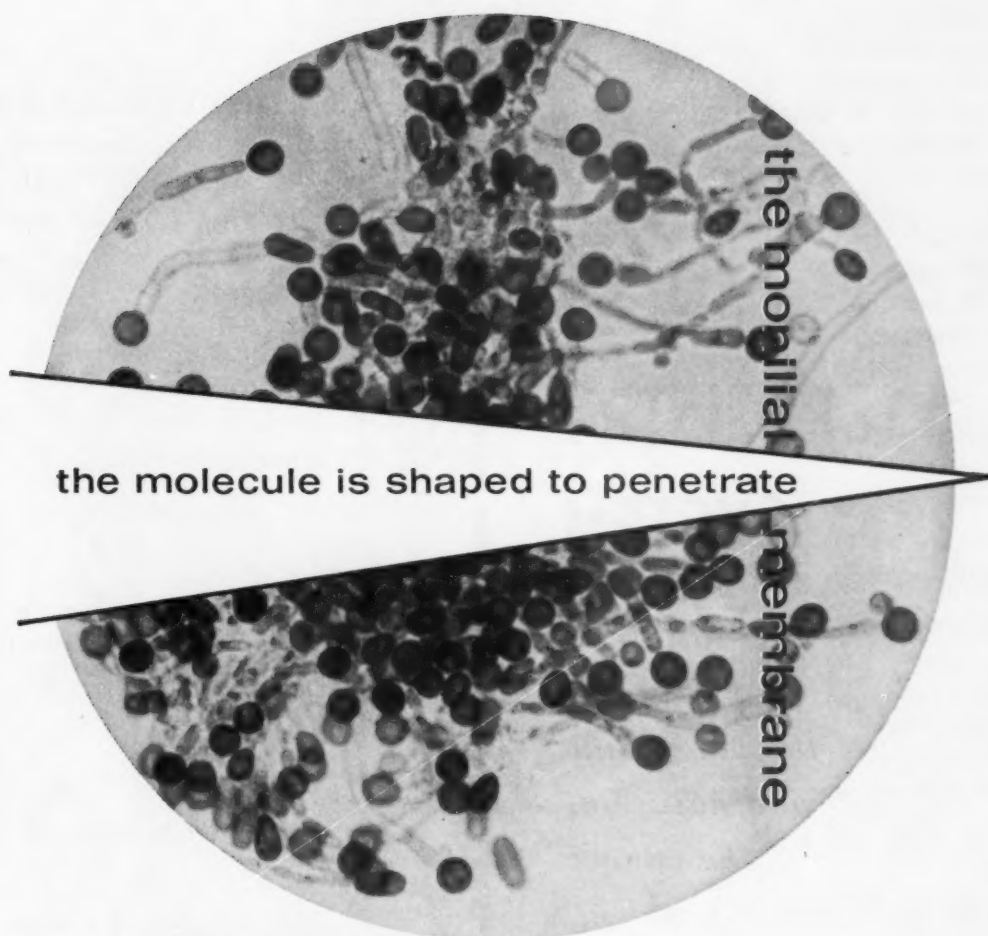
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*Lapan, B.: *Am. J. Obst. & Gynec.* 78:1320, 1959.



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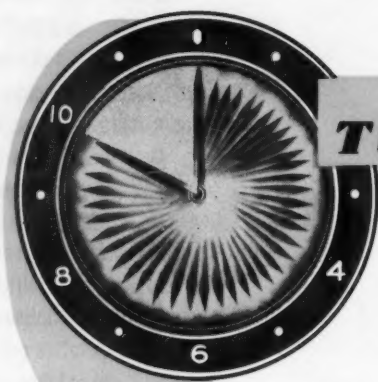
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1. Smith, I. M., and Soderstrom, W. H.: *J. A. M. A.*, 170:184 (May 9), 1959.

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Malignancy in the Pediatric Patient

Clifford D. Benson, M.D.

James R. Lloyd, M.D.

Detroit, Michigan

CLINICAL

583

VARIOUS REPORTS throughout the nation,⁶⁻⁹ as well as public health statistics, show malignancy second only to accidents as the leading cause of mortality in childhood. While it is true that our ability to diagnose malignant lesions has improved in recent years, it is also very likely that cancer is becoming more common in the younger age groups.¹ Unfortunately, a high mortality attends many of the neoplasms encountered in the infant and child, but at the same time there are some forms of malignant diseases that respond very well to therapy if recognized early and treated without undue delay.

Although cancer can and does appear at any age, there are some significant differences between neoplastic processes in adults as compared to the child. While carcinomas comprise ninety per cent of cancer in the adult, the majority of malignant neoplasms in the child tend to arise from mesodermal elements. Bill² reviewed a series of childhood malignancies and found that carcinoma made up only 4 per cent of the total. Sarcomatous tumors are the predominate forms of malignancy in the prepubertal age group. This fact accounts for some of the differences in behavior of malignancy in the child as compared to the adult, especially in terms of signs and symptoms. With the exception of central nervous system and reticuloendothelial neoplasms, malignancy in the child most commonly presents as a palpable, asymptomatic mass. Because these tumors arise from mesodermal embryonic elements, they tend to be deep seated and do not early involve the body surface or its various mucous membranes. Such symptoms as pain, bleeding and obstructive phenomenon, which may appear early with carcinoma, are generally seen only in late or far advanced stages of cancer in the child. Thus, the key to unlock the doors of successful therapy of malignant neoplasms in the pediatric patient is careful attention to any abnormal masses discovered during any routine examination of the child. The examination itself should be conducted with great care in a patient who has been wooed, bribed or cajoled into a co-operative state.

In the event that an abnormal lump or mass is discovered, steps should be taken to rule out the presence of malignancy without any undue delay. Such measures as needle biopsy, watchful waiting, fractional biopsy, et cetera, are to be discouraged. Excisional biopsy,



From the Wayne State University College of Medicine, The Surgical Services of the Children's Hospital of Michigan and the Harper Hospital.

that is, the total removal of the lesion, is the preferred approach whenever possible. There are exceptions, of course, but this program is recommended to discourage the attitude of "let's get a little piece of it and see what it is." In general, if a suspected neoplasm is benign, it does no harm to remove it in its entirety and, if malignant, then the lesion has been managed consistent with the principals of cancer surgery.

By far, leukemia is the most common malignancy in this age group. Central nervous system tumors are second in occurrence and the two taken together account for nearly one-half of the cancerous lesions seen in the pre-adolescent child. Leukemia at present is more a problem of therapy than diagnosis and while we speak in terms of prolonged survival, we cannot yet speak of cures. Central nervous system tumors fall into a specialized class and will not be discussed in this review, other than to point out that any otherwise unexplained vomiting or neurologic disorder should be adequately investigated.

The remaining 50 per cent of malignant neoplasms in children in order of frequency of occurrence are neuroblastoma, Wilms's tumor, bone tumors, soft tissue sarcomas, carcinomas, teratomas and a small miscellaneous group of somewhat rare tumors.

It is well to mention that the malignancies commonly seen in the adult are very rare in this age group and are, for the most part, unusual under the age of twenty. Cancer of the breast is practically non-existent in the child under twelve years of age and we strongly condemn surgical intervention in infants and children for the frequently encountered small, globular, tender, movable mass usually underlying the nipple. The ductal system and breast tissue may be needlessly harmed, functionally and cosmetically, from the most careful attempts at surgical excision. Cancer of the lung is also rare under the age of twenty years and unknown to us prior to puberty. Cancer of the gastrointestinal tract is rare except for occasional colonic malignancies and sarcomatous and lymphomatous involvement of the stomach and small intestine.

The following tumors are those most frequently

encountered in the pediatric patient and are conveniently considered separately in terms of histologic tissue type rather than in organ systems:

Neuroblastoma.—There are few, if any other malignancies that vary so greatly in their behavior as does neuroblastoma. This tumor carries a varying prognosis depending on such factors as age of onset, location of the primary and the presence of bony involvement. Thirty-five to 40 per cent of the patients who present with neuroblastoma are under one year of age and the majority of the patients are under four years of age. The tumor is rare beyond the tenth year of life. Survival figures vary widely but a 15 to 20 per cent over-all cure rate is generally hoped for. One of the most remarkable properties of the neuroblastoma is its tendency to suddenly undergo maturation to the more benign ganglioneuroma or to spontaneously disappear. There is evidence to show that the prognosis is better when the tumor is discovered before the age of one year. When the tumor is located in the cervical or pelvic regions, the outlook is more hopeful. Bony metastases are present in nearly 50 per cent of the patients when first seen and the prognosis for this group is extremely poor. The tumor may arise from any point along the sympathetic chain or from the adrenal glands. Most commonly, it is seen as a large abdominal mass that appears rather suddenly and is accompanied by pain and fever. As such, the tumor is usually far advanced and its rather abrupt appearance and enlargement is often due to hemorrhage into the previously existing tumor. It is not unusual for huge tumors to be asymptomatic. In some cases, the first manifestations may be a rapid and marked enlargement of the liver due to diffuse infiltration of that organ by the tumor. The authors have encountered two patients so afflicted during the past six months. In neither of these infants, both under one year of age, was the primary lesion demonstrable. The tumor in the abdomen tends to be nodular on palpation, often extends across the midline and has a tendency to displace the kidney without distorting the calyceal pattern as seen by pyelography. Often x-ray will demonstrate calcifications in the tumor which aids in the differential diagnosis of Wilms's tumor. There is also a tendency for the aorta and inferior vena cava to be surrounded by the tumor mass, making complete removal next to impossible. Extension into the epidural space forming a dumbbell tumor is not uncommon. Whether in the chest or abdomen, these large non-resectable tumors are best managed by x-ray therapy. A subsequent surgical



THE AUTHOR
Clifford D. Benson, M.D.

attack on the tumor may be indicated, depending upon the response to x-ray therapy.

At the present time, the therapeutic approach that gives the best results is a combination of surgery and immediate postoperative radiation, coupled with chemotherapy. In the past, nitrogen mustard was used as an adjunct to the other forms of treatment. Since nitrogen mustard attacks the tumor cell in very much the same manner as irradiation, it is therapeutically wise to use an agent that exerts its effect in a manner different from x-ray. Actinomycin D is such an agent and has been used with apparent good results, but needs further study. Although effective when used alone, it is thought that this drug potentiates the effect of x-ray.

In the initial evaluation of a patient suspected of having neuroblastoma, a bone survey and bone marrow study should be obtained. There is much discussion regarding the removal of the primary tumor regardless of the metastatic involvement and in so doing, the metastases are thought to regress or respond more rapidly to x-ray therapy. When complete removal is impossible, subtotal excision insofar as is safe is advised by some authors.⁵ In any event, a biopsy should be obtained for positive histologic identification.

Wilms's Tumors (Embryoma).—Embryomas of the kidney are far more common than any other renal neoplasm in the pediatric patient. The peak incidence is from two and one-half to three and one-half years and they become increasingly rare with increasing age beyond six years. Bilateral renal involvement does occur. There is no significant tendency for the right kidney to be affected more often than the left. The tumor commonly presents as a large, palpable, asymptomatic intraabdominal mass. Characteristically, the tumor is smooth, does not cross the midline, except in far advanced stages and produces distortion of the calyceal pattern on the intravenous pyelogram. Rarely, the kidney is either so extensively destroyed or the drainage structures are obstructed such that excretory function is no longer present and the kidney will not visualize with intravenous pyelography. When this is the case, hydronephrosis is suggested but can generally be differentiated by transillumination of the hydronephrotic kidney.

Unfortunately, nearly one-fourth of these tumors have metastasized by the time the patient is seen. Invasion of the renal calyces or pelvis with resultant hematuria presents a poor prognosis. A chest film and bone survey should be obtained at the time of the intravenous pyelography. Once the diagnosis is sus-

pected palpation of the abdomen should be held to an essential minimum and discontinued when the suspicions have been confirmed. Surgical intervention (nephrectomy) by the transabdominal route should be performed as soon as possible with no more than 12 to 24 hours' delay. Radiation treatments should follow the surgery and should be started on the day of surgery.⁵ Although not thoroughly evaluated at present, Actinomycin D may potentiate the effect of x-ray therapy in the control of the primary as well as metastatic lesions. Metastases, most commonly in the lung, are occasionally controlled with a course of radiation therapy. A solitary lesion that shows good response to x-ray, but will not completely disappear, should be removed surgically.

The prognosis for survival is slowly improving and figures vary from thirty to fifty per cent. In our own experience² with seven patients with asymptomatic Wilms's tumors, four are living and well without disease six, eight, nine and eleven years after nephrectomy. One patient operated upon originally twenty-one months ago developed a solitary metastatic lesion in the right lung seventeen months after nephrectomy which was removed by wedge resection.

Soft Tissue Sarcomas.—Soft tissue sarcomas comprise a class of tumors which include such lesions as rhabdomyosarcoma, fibrosarcoma, liposarcoma and malignant neurilemmoma. Most commonly, the retroperitoneal space and the lower genito-urinary tract is involved. These tumors grow by direct extension and metastasize through the lymphatics. If discovered early, the prognosis is fair to good when complete surgical removal along with the neighboring lymphatics is possible. X-ray has little effect on these tumors, but the x-ray potentiating effect of Actinomycin D may be of some value when used postoperatively. In no other tumor in the pediatric age group is the second look operation so strongly indicated. Local recurrences are prone to appear within six to eight months and occasionally it is possible to surgically control the disease by removing a small local recurrence. This has been done successfully in two of our patients, both of whom had fibrosarcomas. One involved the cervical intra spinous ligaments and this child is well three and one-half years after secondary surgery. The other patient had involvement of the lumbar fascia and is clinically free of disease five years after operation.

Cancer of the Thyroid.—Recent surveys of malignancies of the thyroid in children suggest that x-ray treatments for benign hypertrophic lesions in the in-

fant may incite malignant degeneration in the growing child. The most direct evidence for this is found in the studies made by Rooney, Crile and others.⁷⁻⁸ Radiation of the cervical and superior mediastinal regions in infancy for thymic enlargement has resulted in an apparently increased incidence of carcinoma of the thyroid in the growing child. Not only thyroid cancer, but other forms of cancer including leukemia are more common in these patients. The point to be emphasized here is the avoidance of x-ray treatments in infancy with the possible exception of the superficial treatment of hemangiomas. Thyroid carcinoma in childhood is of the papillary variety in the vast majority of cases. We agree with the conservative approach recommended by Crile.⁴ In essence, the involved lobe of the thyroid is extirpated along with the isthmus and all involved lymph nodes. Postoperatively, the patient is given desiccated thyroid which apparently depresses TSH secretion and holds the tumor in check. Disfiguring radical surgery is not indicated, nor is total thyroidectomy with its accompanying potential hazard of hypoparathyroidism. The patient is afforded the usual close postoperative follow up and recurrences are dealt with as they are discovered.

Ovarian Tumors.—Malignant neoplasms of the ovary are far less common than the benign forms of ovarian tumors. This differentiation between benign and malignant lesions is made safely only by histologic identification. As elsewhere in the management of malignant disease in children, undue delay is discouraged. Any intra-abdominal mass should be considered malignant until proven otherwise by positive histologic diagnosis. Whether benign or malignant, ovarian tumors frequently become twisted on their pedicle resulting in infarction of the tumor. Abdominal pain associated with nausea and vomiting are frequently the presenting signs and symptoms. Teratomas are the most common of the ovarian neoplasms. A benign tumor for the most part, malignant degeneration is occasionally seen. Follicular cysts are benign lesions and are generally not considered hormonally active in the prepubertal age group. The granulosa cell, theca cell tumor, on the other hand, will produce hormones and is a common cause of precocious puberty. The granulosa cell tumor is the malignant component but the prognosis is generally good unless the tumor undergoes sarcomatous degeneration. Other forms of ovarian cancer are unusual under the age of twenty and probably do not occur in the prepubertal child.

Sacroccygeal Teratoma.—This tumor is nearly always benign but can undergo malignant degeneration. The lesion is one of the more frightening birth deformities and may achieve a mass equal in size to that of the attached patient. Being present at birth, a decision must be made regarding management in as little time as possible. Myelomeningocele and chordoma, lesions that are also seen at birth, offer the principal problem of differential diagnosis. Generally, it is not difficult to determine the nature of the lesion and if it is a sacroccygeal teratoma, early surgical intervention is indicated. Although physiologic functions are not usually deranged, pressure symptoms on the rectum, bladder and the tendency for the tumor to ulcerate favor early operation. The formidable appearance of the teratoma is not an index of hopelessness since even the largest of these tumors can be successfully excised by the experienced surgeon. Complete removal of the tumor along with the coccyx is the best safeguard against recurrence. In our experience with this lesion, two out of twelve patients did not have complete removal of the tumor initially because of technical reasons. Both of these children subsequently succumbed to recurrences that exhibited malignant behavior. The remaining ten patients are living and well. Postoperatively, these children do well and there is no clinical evidence of damage to the lower bowel, bladder and urethra or innervation of the lower extremities. Of all the tumors in infants that possess a malignant potential, the prognosis is best for sacroccygeal teratoma if the patient is given the opportunity for early definitive surgery.

Discussions and Conclusions

There are a miscellaneous group of tumors in children that are relatively rare insofar as the frequency with which they are seen by the individual general practitioner or pediatrician. However, in the large medical centers, these unusual forms of malignancy are not uncommon. While one pediatrician may encounter only one or two such tumors in a given ten year period, the chance that any of the physicians in a given area may encounter one of these tumors is equally great. For instance, primary neoplasms of the liver are so rare that it would be unusual to see more than one or two of these tumors in a life time of practice. Because of the unusual nature of such malignancies, the patient is often referred to one of the larger medical centers and here, regardless of the rarity of the tumor in any given population, there will be a familiarity with such neoplasms that speaks

of experience with numerous cases. Tumors of the liver, thyroid, soft tissue sarcomas, ovarian neoplasms and sacrococcygeal teratomas are either malignant or potentially malignant lesions that fall within this group. That the outlook for these forms of malignancy is not totally hopeless is borne out by the survival of a significant number of the children so afflicted. In the larger medical center, where there has been an opportunity to develop experience with these lesions, a regimen of therapeusis often develops that makes possible survival rates that are indeed encouraging.

Diagnostically, many of these lesions are not a problem and are quite obvious at birth (i.e., sacrococcygeal teratoma). Some of the other forms of unusual or rare malignancies are not so readily apparent, such as primary tumors of the liver. Prolonged studies may lose valuable time toward obtaining a cure from malignancy, in addition to which, the laboratory findings are for the most part of very little help in establishing a diagnosis. In the vast majority of cases, formal biopsy is the most direct and conservative means, economically, physiologically and psychologically of arriving at a diagnosis. Having identified the nature of the lesion, then and only then can one proceed with any objectivity toward the hope of a cure. It has now been well established that radical surgery in the child and even the infant is feasible and occasionally successful. That the opera-

tion is successful is of little significance if the patient has not been seen sufficiently early in the course of the disease and a hopeless long term prognosis is presented to the operating surgeon. It is only in the lessening of the time interval between the date the patient is first seen and the date that diagnosis and treatment materialize that we may expect to see significant survival in children who are afflicted with some of the more unusual, but not totally hopeless, neoplasms.

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Preventive Medicine

New physicians are being taught to emphasize their skills on the growth and development of their patients—from conception to old age—and to use these skills in preventing disease, rather than curing it after it has happened.

Writing in the February issue of *The New Physician*, official journal of the Student American Medical Association, Lenor S. Georke, M.D., of Los Angeles, told young doctors and doctors-to-be that the increasing availability of medical care through insurance, and health education "will bring people into the physician's office before they can be labelled as patients. All of the physician's knowledge of normal physiology may be challenged in the evaluation of an ap-

parently healthy individual."

Dr. Georke gave an example of modern medicine by citing the law which requires a blood test before marriage to show freedom from venereal disease. He said, "The physician has the choice of simply having his nurse do the venipuncture, send the specimen to the laboratory and sign a form—all without ever seeing the people—or he may obtain a history, perform a physical examination and provide marriage counseling. When the physician makes the first choice, it places him in competition with quacks; the second choice is consonant with professional responsibility in the best interest of both the individual and the physician."

The Indications for Cancer Chemotherapy

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NEOPLASTIC disease may be considered as having three phases of existence. The analysis of cancer follow-up data by Hardin Jones¹ indicates that populations of breast cancer patients are divisible into three sub-groups, according to their survival experiences. The proportion of breast cancer patients who die at a "normal" death rate comparable to that of an age-matched total population group is about the same in treated and in untreated series. It includes about 20 per cent of all breast cancer patients. Death rates from all causes in this group approximate 20 per thousand patients per year at age fifty.

Patients dying at this low rate have had, in treated series, intraductal carcinoma and carcinoma not involving axillary nodes in most instances, though a small per cent of patients who had axillary nodes positive also are found in this group, which may be said to be in the "localized" phase of the disease.

A second group which is discernible in the analysis of Jones has a death rate of about 250 per thousand patients per year. This group has only about a 10 per cent five year survival rate and, in treated series, has included almost all patients with positive axillary nodes and a large proportion of those with inoperable disease. This is the group in the phase of "disseminated" carcinomatosis. It comprises about three-quarters of all patients with breast cancer.

Finally, a third group of patients dying at a rate of 1,500 to 2,000 deaths per 1,000 patients per year is probably discernible biostatistically. This is a small proportion, only five or 10 per cent at most, of any given large population of cancer patients. These patients are in the "terminal" phase of carcinomatosis.

G. B. Mider indicated three stages of carcinomatosis

in experimental animals. He identified the first stage, which might be considered comparable to above-described "localized" phase, as the period during which increase in transplanted tumor size did not interfere with normal carcass weight increase in young

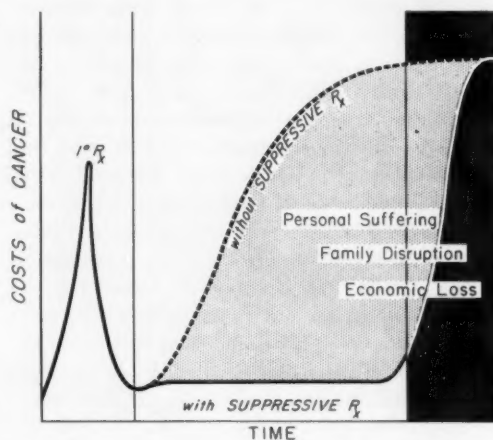


Fig. 1. Graphic representation of the social cost of cancer. Stippled area represents savings in total social costs attainable with treatment of disseminated cancer.

tumor bearing animals. In the second stage, the tumor size continued to increase rapidly, and hepatosplenomegaly, not due to metastases, developed, while total carcass weight failed to increase, normal growth having stopped. In the third stage, carcass-weight rapidly declined, death was imminent, and tumor weight failed to increase or decreased.

In the clinical management of patients with recurrent or disseminated carcinomatosis, one commonly encounters patients in whom the disease is indolent, and in whom it apparently occasions no disability. Body weight and strength are well maintained and anemia, hypoproteinemia, elevation of erythrocyte sedimentation rate and alpha 1 and alpha 2 globulins which are regularly seen in advancing neoplastic disease are absent or minimal in degree. These patients may correspond to Mider's early stage 2 and the latter,



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CANCER CHEMOTHERAPY—BRENNAN

TABLE 1.

Agent	Indication	Useful Clinical Responses	References
Alkylating Agents			
Nitrogen Mustard (Mustargen R)	Lymphoma, chronic leukemia	Frequent	1. Comparative clinical and biological effects of alkylating agents: <i>Ann. N.Y. Acad. Sci.</i> , 68: 657, 1958.
TEM, TESPA (Thiotepa R)	Bronchogenic, mammary, ovarian	<30%	
Chlorambucil (Leukeran R)	Prostatic, melanoma corpus uterus	Infrequent (10-20%)	2. Sykes, et al: Comparative therapeutic activity of the nitrogen mustards and allied compounds: <i>Med. Clin. N.A.</i> 40: 837, 1956.
Busulfan (Myleran R)		Occasional (<5%)	
Antimetabolites			
Amethopterin (methotrexate R)	Acute leukemia in children	Frequent	1. Burchenal, J.: Current status of clinical chemotherapy. Current Research in Cancer Chemotherapy, Report No. 4, National Cancer Institute, Feb., 1956.
6-mercaptopurine (purinethol R)	Acute leukemia Choriocarcinoma Mammary, ovarian	Frequent Infrequent	2. Herts, R., et al.: Chemotherapy of choriocarcinoma and related trophoblastic tumors in women, <i>J. Am. M. A.</i> 168: 845, 1958.
5-fluorouracil	Colon and rectum stomach	Occasional	3. Carreri, A. R., et al., Clinical studies with 5-fluorouracil, <i>Cancer Res.</i> 18:475, 1958.
Hormonal Therapy			
Androgens	Breast Ca.	Frequent	1. Kennedy, B. J.: Present status of hormone therapy in advanced breast carcinoma, <i>Radiology</i> , 69:330, 1957.
Estrogens	Prostatic Ca.	Frequent	2. Fennes, P., et al.: Treatment of acute leukemia with cortisone and corticotrophin, <i>AMA Arch. Int. Med.</i> , 94:384, 1954.
Corticoids (Cortisone, Prednisone, etc.)	Lymphoma-leukemia	Frequent	3. Lemon, H. M.: Prednisone therapy of advanced mammary cancer, 12:93, 1959. 4. Nesbit, R. M., Baun, W. C.: Endocrine control of prostatic carcinoma, <i>Cancer</i> , 4:1176, 1951.

in whom the above laboratory indices are markedly displaced, to his stage 3.

It is impossible to avoid the economic losses, medical costs, family disruption, and personal suffering which are produced by the primary diagnosis of cancer and its necessary primary treatment. No major decrease in the summative "social cost" of the "localized" phase of cancer is realizable unless the whole technical nature of the treatment of early cancer is radically changed by advances and discoveries yet to be made.

Terminal cancer, which corresponds to the late stage 3 of Mider, is of relatively brief duration. Hence, its social costs, though great, are suffered acutely and, in the aggregate, as in the case of early cancer, are generally manageable under current schemes for funding medical care and compensating for acute social and family disruptions arising from medical illnesses.

The phase of clinical cancer labelled "disseminated cancer" accounts for the largest portion of the total social cost of the disease (Fig. 1).

It may, and does, produce protracted disabilities, psychological and physical, which, by reason of their chronicity, present special problems of funding and social support not well dealt with by systems set up

primarily with acute-illness problems in mind. It is in this phase of the disease that considerable savings of social cost are now achievable through close supportive management by the physician and by chemotherapy and hormonal therapy, even as now available.

Patients with disseminated breast cancer who are fifty years of age die at a rate approximately the same as the rate of death in the general population at age seventy. All understand the importance of efforts to prevent disability, alleviate it, or temporarily relieve it, in the septuagenarian, though its return is inevitable and death within five years quite likely. It must be also understood that these efforts and services are likewise needed in patients with disseminated cancer, particularly where a significant percentage of three year survivals may be anticipated. Besides breast carcinoma, recurrent or disseminated carcinomata of the bowel, cervix, prostate, and kidney, and malignant melanoma, the lymphomata and the chronic leukemias are important tumors which fall in this class.

The phase of election for chemotherapy and hormonal therapy is the phase of disseminated cancer. Suppressive treatment is indicated as early as progression of the disease, manifested either by tumor

growth or a decline of general health, for which no other cause is discoverable, develops.

Careful diagnostic evaluation of symptoms and disabilities in patients with cancer is important. The presence of tumor does not constitute a satisfactory etiologic demonstration unless the patho-physiologic mechanisms linking tumor with the effect under study are traceable. Rational treatment and accurate prognosis also depend upon etiologic knowledge in this sense. Diabetes, gout, collagen-diseases including dermatomyositis and rheumatoid-like arthritis, hypoglycemia, polycythemia, migratory phlebothrombosis and other associated states requiring direct therapeutic attention complicate the course of many patients with carcinomatosis and may be the major, proximate, manageable causes of their disability.

The general, non-neoplastic, disease liabilities of persons over sixty years of age are more commonly encountered in patients with disseminated cancer than in their non-tumor-bearing cohorts by age. Arteriosclerosis—coronary, cerebral, and peripheral; nephrosclerosis; pernicious anemia; diverticulosis; cholelithiasis; and bronchopulmonary disease produce symptoms often mistaken for the effects of cancer.

The assistance of laboratory indices in determining the point of early change from indolent, non-disabling, slowly progressive cancer of the early disseminated phase to that of progressive disabling carcinomatosis of a later pre-terminal disseminated phase should be sought. Regular x-ray examinations, where indicated, periodic measurement of tumor masses, and observation of total serum protein values, the albumin-globulin ratio, the sedimentation rate and the hemoglobin will help to detect this change promptly.

Appropriate chemotherapy or hormonal therapy should then be instituted. A group of sources which may be employed in choosing agents for suppressive chemotherapy and hormonal therapy is included in Table I.

Successful responses cannot be expected in more than forty per cent of cases with the hormonal agents in breast and prostatic cancer, nor, in more than five to fifteen per cent of cases with the chemotherapeutic agents in lung or colon carcinoma. Still, for disease states otherwise not amenable to intervention, even these percentages of response are by no means negligible.

Summary

1. Of the biostatistically, clinically, and physiologically identifiable phases of neoplastic disease, that of disseminated cancer exacts the greatest social cost and is the most amenable to change in this regard.

2. Chemotherapy and hormonal therapy are recommended as adjuncts in the management of disseminated cancer, but not of early or terminal cancer.

3. Progression of disseminated cancer should be watched for carefully and constitutes the direct indication for suppressive hormonal and chemotherapeutic intervention.

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Ulcerative Colitis

Resolution of the ulcerative process has been reported in 19 of 24 cases of ulcerative colitis with the use of an anion exchange resin and silicates fortified by polymyxin B and phthalylsulfacetamide (Resion-PMS).

Robert Ehrlich, M.D., of Boston conducted a controlled study in which the 24 treated patients represented all stages of the diseases, varying in duration from three months to five years.

Only three of the twenty-four patients were relatively unchanged or were referred to surgery, while the two remaining patients were improved but suffered relapses during periods

of four months to more than a year after treatment. Thus the complete resolution rate was 71 per cent.

No other medications were used during treatment, and the only dietary restriction was elimination of alcohol. Time for healing varied from 2.5 to 17 weeks, according to severity of the disease. Five control patients on placebo therapy failed to improve.

The study caused Dr. Ehrlich to conclude that "Resion-PMS adds materially to the armamentarium of therapeutic agents in the treatment of ulcerative colitis."—*American Journal of Gastroenterology*, February, 1960.

Frozen Sections

Rapid Tissue Diagnosis

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IT IS GENERALLY agreed^{1,2} that deRiemer of Holland in 1818 first introduced the technique of freezing diseased tissues to prepare sections for examination under the microscope. Baker³ attributed the use of the freezing technique to Raspail in 1825. Stelling² used the method in 1843 in studies of histology of the central nervous system. Early experiences with this technique apparently consisted of placing the tissue to be cut in a container in a brine freezing mixture. Ultimately, rapidly evaporating ether, ethyl chloride, and carbon dioxide gas under pressure in cylinders were used. The Histofreeze and cryostat are more recent technical advances.

Knives used have included razor blades,^{4,5,6} two parallel knife blades introduced by Valentin (1810-1883), and the first "modern" microtome by His (1831-1904). The sliding and rotary microtomes are used largely by choice of the technician and pathologist. Ranvier's and other French microtomes preceded that of His and were simpler and more generally used.⁴

Indications for frozen sections include:

1. Determination microscopically of the disease process present.
2. Assistance to the clinician to decide upon definitive therapy while patient is anesthetized; determine extent and adequacy of surgical procedures.
3. Control clinical and gross diagnoses.

The frozen section is indicated as noted above for the patient's benefit; not merely to satisfy the clinicians' curiosity.⁷ Obviously it has usefulness, in addition, to provide immediate information about the type of process present in a given organ at necropsy as well as in the living anesthetized patient.

The surgeon or pathologist should not be satisfied with clinical or gross diagnosis. Even though experience and careful clinical and gross examination cor-

relate well with microscopic diagnosis, all modalities should be utilized.

It must be appreciated by the clinician that in many laboratories frozen section techniques are inferior to permanent tissue sections and if the pathologist is unable to arrive at a definitive diagnosis, he should not be criticized, as delay of a day or two following biopsy apparently is not critical in most cases. There is, of course, increasing evidence that cancer cells are shed into the blood and lymphatics during manipulation of a neoplasm, but the exact time that the first cell is exfoliated and the body is receptive to the growth of metastatic cancer cells is unknown.

It is no longer necessary for the pathologist to be at the surgeon's side in the operating room, as time is not as important a factor with better anesthesia and pre- and postoperative care; in addition, gross diagnosis must be confirmed by microscopic examination. Likewise it is much more valuable to the clinician and patient to have the opinion of a group of specialists in pathology in a department of pathology than to depend upon any single individual for a diagnosis in a difficult case. The availability of an entire group of technicians and pathologists in the pathology department provides better, more rapid service for frozen sections than can be provided by single individuals in the usual small frozen section laboratory in the operating suite.

The pathologist is a consultant to the clinician and patient and should have the courtesy in such a relationship to know in advance about the clinical

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TABLE I. SURVEY OF ACCURACY OF FROZEN SECTION DIAGNOSES IN VARIOUS ORGANS AND SYSTEMS

Organ	Frozen Section and Control Diagnoses in Agreement				Frozen Section Diagnoses Altered by Examination of Paraffin Section Controls				
	Benign	Malignant	Total	Per Cent Accuracy	Malignant To Benign	Uncertain To Benign	Uncertain To Malignant	Benign To Malignant	Per Cent Error
Breast	226	59	288	99%	0	1	1	1	1.0%
Thyroid gland	205	14	232	94.4%	0	2	6	5	5.6%
Lymph nodes	268	62	338	96.7%	0	1	5	2	3.3%
G. I. tract	205	89	305	96.4%	0	1	8	2	3.6%
G. U. tract	48	24	79	91.2%	1	0	4	2	8.8%
Respiratory tract	65	59	131	94.7%	1	2	0	4	5.3%
Endocrine, except thyroid	22	1	24	96.0%	0	1	0	0	4.0%
Bone and soft tissue	68	16	89	94.4%	0	1	3	1	5.6%
Misc.	67	29	97	99%	0	0	0	1	1.0%
Total	1174	353	1583	96.5%	2	9	27	18	3.5%
							2.3%		
							1.2%		

findings and time of the proposed operative procedure. The pathologist will go to the operating room any time his advice is desired by the surgeon, but can spend his time to much better advantage in routine duties than in waiting for excision of tissue in the operating room. Lack of clinical information on forms and identification of exact sources of tissue specimens submitted with requests for frozen sections are the most serious errors of omission committed by the clinician. The pathologist must be provided with pertinent information concerning any given patient if his conclusions are to have the clinical-pathologic value desired.

Material and Methods

All cases studied by frozen sections during a period of two years, 1955 to '56 and 1957 to '58 were reviewed. During this period, 1583 tissues submitted from 1107 operative procedures were frozen for rapid diagnosis. In most instances, only a small portion of the tissue received was selected for sectioning by a resident or staff pathologist. The remainder of these specimens was placed in 10 per cent formalin for fixation. In occasional instances, where the excised tissue was of small size, all of the submitted tissue had to be frozen. Each tissue to be frozen was first fixed by dropping it into a 16 mm. test tube containing 10 per cent formalin solution. After heating to the boiling point, the tissue was transferred to distilled water and frozen, using the Histofreeze* apparatus. Multiple sections were routinely made and floated on distilled water until at least two satisfactory sections were obtained. At least two of these were floated on separate micro-slides, and rapidly dehydrated by pouring a mixture of equal parts ether and absolute ethanol over the section. The tissue section was then attached to the micro-slide by the addition of one drop of a dilute

ether-ethanol celloidin solution. Each section was then stained with hematoxylin and eosin, dipped in absolute ethanol, and then quickly freed of celloidin by pouring the ether-absolute ethanol mixture over it. Clearing was accomplished with xylene and carbo-xylene, and the sections were mounted in "clarite."

The remainder of each frozen tissue was removed from the frozen section microtome, placed in absolute ethanol, and processed in paraffin for sectioning. Although the tissue usually showed artefact incident to rapid fixation and freezing, this was generally insufficient to cause difficulty in diagnosis. It is our opinion that the fixation artefact is not sufficient in magnitude to warrant labeling the use of hot formalin fixation as "deletory hocus-pocus," as Dockerty⁸ stated. Although polychrome staining methods may be advantageous for their simplicity and rapidity, there are certain disadvantages as well; the most important of which may be the familiarity of the pathologist with hematoxylin and eosin-stained sections of routine material. Sections also are less subject to fading in hematoxylin and eosin stains and this presents certain problems with the polychrome methods.⁸

Duplicate frozen sections are examined routinely by one or more members of the permanent staff. Not infrequently consultations result in more decisive diagnoses, or add a degree of certainty to some unqualified tentative diagnoses. Utilization of numerous technical and professional members of the staff is occasionally required when as many as fifteen to twenty specimens arrive within a period of an hour.

Frozen section diagnoses are checked by diagnosis of paraffin sections prepared from the remainder of the frozen tissue; this serves to control the diagnosis. In addition, there is a portion of the material which is routinely processed and similarly allows study of histological changes under more optimum conditions. In those rare instances where the tissue remaining after

*Scientific Products.

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cutting frozen sections was too limited for processing into paraffin, there usually was additional unfrozen tissue which allowed confirmation of the frozen section diagnosis.

Records were reviewed from the standpoint of the limitations associated with frozen sections, rather than

Table II includes the false positive and false negative diagnoses of malignancy, according to the source of tissue, and the erroneous and corrected diagnoses. The two false positive diagnoses were based on focal peritoneal mesothelial proliferation and bronchiolar epithelial proliferation. Each diagnosis incorrectly

TABLE II. FALSE POSITIVE AND NEGATIVE DIAGNOSES

False Positive Diagnoses (two cases)		
Tissue	Frozen Section Diagnosis	Final Diagnosis
Peritoneal nodule	Metastatic carcinoma	Hyperplastic mesothelium
Subpleural nodule	Adenocarcinoma	Hyperplastic bronchiolar epithelium
False Negative Diagnoses (sixteen cases)		
Breast	Fibroma	Well differentiated fibrosarcoma
Thyroid gland (three specimens)	Inflammation	Spindle cell carcinoma
Thyroid gland	Adenoma	Adenocarcinoma
Thyroid gland	Adenoma	Adenocarcinoma
Lymph node	Hyaline fibrosis	Hodgkin's disease
Lymph node	No carcinoma	Focal metastatic small-cell carcinoma
Small bowel	Chronic ulcer	Ulcerated reticulo-endothelial cell sarcoma
Stomach	Chronic ulcer	Ulcer with lymphosarcomatous infiltration
Larynx	Chondroma	Chondrosarcoma
Epiglottis	Epithelial hyperplasia	Early infiltrating squamous cell carcinoma
Nasal cavity	Proliferating fibrous tissue	Malignant melanoblastoma
Nasal cavity	Proliferating fibrous tissue	Fibrosarcoma
Prostate	Hyperplasia	Adenocarcinoma
Prostate	Hyperplasia	Adenocarcinoma
Bone	Chronic inflammation	Plasmacytic myeloma
Skin	Junctional nevus	Malignant melanoblastoma

from the standpoint of difficulties in diagnosis of certain neoplasms where errors or qualifications might still occur following careful examination of multiple paraffin sections. Therefore all cases in which both the frozen section and paraffin section diagnosis were qualified by similar uncertainty were eliminated from the group. These limitations cannot be ascribed to the frozen section technique alone.

Results

The frozen section diagnosis was in agreement with the final diagnosis on control sections in 1,527 of the 1,583 tissues studied during the period, for an accuracy of 96.5 per cent. Examination of control sections resulted in important modifications of uncertain or qualified diagnoses made from frozen section in thirty-six tissues (2.3 per cent). The frozen section diagnosis was reversed in regard to the benignancy or malignancy in twenty instances (1.2 per cent). Table I summarizes the distribution of errors according to organ or organ system. Best results were obtained in breast tissues, with a gradual increase in the occurrence of errors in other tissues, listed in order: lymph nodes, gastrointestinal tract, endocrine tissues except thyroid gland, lower and upper respiratory tract, thyroid gland, soft tissue and bone, and genitourinary tract.

APRIL, 1960

signified a focus of metastatic carcinoma to the surgeon. The malignant lesions associated with false negative diagnoses covered a diverse group of lesions, but lymphoblastomas, well-differentiated adenocarcinomas of thyroid and prostate, undifferentiated carcinomas, melanoblastomas, fibrosarcomas, and chondrosarcomas proved to be most troublesome.

Table III lists the uncertain frozen section diagnoses which could be significantly clarified by study of paraffin sections.

Discussion

Our experience with frozen section diagnosis during the period of this study compares favorably with the reports of other investigators.^{7,9-13} We support the use of frozen sections for rapid diagnosis of almost any tissue where there is any possibility of adding useful information which may sufficiently clarify the nature of lesions requiring definitive surgical treatment. Although there are certain hazards¹³ associated with rapid diagnosis of tissue from any source, the frequency of error increases for specific types of material.

Best results were obtained in diagnosis of lesions of breast. Although Ackerman and Ramirez⁹ have referred to certain problematical lesions of the breast, these not infrequently may remain uncertain after multiple paraffin sections are available for study.

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False negative diagnoses, although rather frequent in the experience of Winship and Rosvoll,¹⁴ were uncommon in occurrence in this study.

Although we employ rapid diagnostic methods in the study of lymph nodes most frequently, and achieved a rather high degree of accuracy, there was

racy in the study of endometrium and cervix by this method, and this has been supported to some extent by Winship.¹⁴ From our experience, though limited, we believe that both inadequate sampling and the rather frequent occurrence of superficial or non-infiltrative carcinomas, combine to limit the use of frozen sec-

TABLE III. LESIONS REPORTED AS UNCERTAIN ON FROZEN SECTION

Benign on Final Diagnosis		
Tissue	Frozen Section Diagnosis	Final Diagnosis
Breast	Inflammation, (?) neoplasm	Abscess
Thyroid gland	Adenoma, (?) carcinoma	Adenoma
Thyroid gland	Adenoma	Adenoma
Lymph node	Hyperplasia, (?) lymphoma	Hyperplasia
Pleura	Scar with atypical cells	Mesothelial hyperplasia
Thymus	Thymoma, (?)	Thymoma
Soft tissue	Productive inflammation, (?) neoplasm	Productive inflammation
Malignant on Final Diagnosis		
Breast	Intraductal hyperplasia, (?) carcinoma	Intraductal carcinoma with early infiltrative growth
Thyroid gland	Adenoma, (?) carcinoma	Adenocarcinoma
Thyroid gland	Adenoma, (?) carcinoma	Adenocarcinoma
Thyroid gland	Adenoma, (?) carcinoma	Adenocarcinoma
Lymph node	Lymphoblastoma, (?)	Hodgkin's disease
Lymph node	Lymphoblastoma, (?)	Reticulo-endothelial cell sarcoma
Lymph node	Probably metastatic carcinoma	Metastatic carcinoma
Lymph node	Lymphoblastoma, (?)	Lymphosarcoma
Lymph node	Lymphoblastoma, (?)	Lymphosarcoma
Esophagus	Atypical hyperplasia, (?) carcinoma	Carcinoma in situ
Stomach	Atypical cells, (?) carcinoma	Carcinoma
Colon	Atypical polyp	Early carcinoma
Liver	Lymphoblastoma, (?)	Lymphosarcoma
Small bowel (same case)	Neoplasm, (?)	Lymphosarcoma
Parotid (3, same case)	Mixed tumor, (?) malignant	Pseudoadenomatous basal cell carcinoma
Ovary	Granulosa cell tumor, (?) carcinoma	Carcinoma
Prostate	Atypical glands, (?) carcinoma	Adenocarcinoma
Endometrial curettings	Choriocarcinoma, (?)	Choriocarcinoma destruens
Urinary bladder	Atypical hyperplasia, (?) carcinoma	Transitional cell carcinoma
Bone	Plasmacytoma, (?)	Plasmacytic myeloma
Bone	Plasmacytoma, (?)	Plasmacytic myeloma
Bone	Giant cell tumor, (?) malignancy	Malignant giant cell tumor

a significant number of errors. Although we accurately diagnosed lymphoblastomas on eight occasions in various locations, there were four cases in which we misdiagnosed the lesion primarily, and eight instances in which we qualified the diagnosis in some way; this supports statements by others,^{9,11} concerning the real restrictions involved in diagnosis of primary neoplasms of lymph nodes. We found similar difficulty with lymphoblastomatous infiltrations in other organs. Lymphnodal carcinomatous metastases often were easily diagnosed on frozen section, as stated by Horn.¹⁰ Lymph nodes containing small metastatic foci were called negative on occasional frozen sections. This difficulty supported Winship's¹⁴ opinion that it is hazardous to tailor lymph node dissections on negative sampling of lymph nodes for metastases by frozen sections.

Our experience with the application of frozen section diagnosis to endometrial curettings was quite limited during the period of this study, as acetone fixation of the entire specimen is a better technique. Jennings and Landers¹¹ attained a high degree of accu-

tions. This opinion was expressed by Ackerman⁹ and Horn.¹⁰

We favor the continued application of frozen section diagnosis to thyroid lesions, as recommended by Ackerman.⁹ We are however, at the same time, aware of rather serious limitations in the application of the method, confirmed by our experience and that of other investigators.¹⁵ Some of the problems in diagnosis are not entirely restricted to frozen sections, but are reflected in highly problematical lesions after multiple paraffin sections are available.

We share the opinion expressed by Ackerman⁹ who condemned the application of rapid diagnostic methods to the study of lesions of skin and mucous membranes. We have had similar discouraging experiences in the diagnosis of lesions of the nasal mucosa. Although we will attempt to determine the adequacy of excision of certain neoplasms, such as basal cell carcinomas of skin, especially those which extend into deeper tissues, we often undertake it with the knowledge that in so doing we may either detract from the validity or preclude the more accurate appraisal of

the presence of or occasionally even the type of neoplasm in the specimen or along the excised margins.

Examination of curetted prostatic tissue may reveal the presence of carcinoma in frozen sections. False negative diagnoses were rather frequent in this series. This difficulty may be explained by inadequate depth of biopsy, inadequate sampling of tissue, and production of artefact in curettings obtained by standard operative techniques. These factors combine to limit recognition of carcinoma in frozen sections. Present methods do not allow the pathologist to eliminate the possibility of carcinoma on frozen sections alone.

We continue to support the application of frozen section methods to almost any tissue. We routinely examine practically any tissue submitted for frozen section, including brain, breast, liver, kidney, lymph node, thyroid, parathyroid, pancreas, stomach, colon, salivary gland, gonads, skin, prostate, and lung. Densely calcified tissues obviously cannot be sectioned, but uncalcified and sparingly calcified portions of bone tumors may be processed without undue difficulty.

Summary

This study evaluates the accuracy of 1,583 tissue diagnoses based on rapid frozen sections stained with hematoxylin and eosin during a two-year period. The overall accuracy was 96.5 per cent. False negative and false positive diagnoses represented 1.2 per cent, and uncertain diagnoses 2.3 per cent of the total. Although the accuracy of frozen section diagnoses varied according to the source of tissue and type of neoplasm, this limitation would not seem to preclude attempts to utilize the method for almost any given tissue. However, factors which seriously limit or prevent subsequent adequate histological examination of tissue

may occasionally preclude a definitive final diagnosis. For these reasons certain specimens, including those from skin and mucous membranes, when the lesion is small and material limited, are not desirable.

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Studies Effect of Smoke

"Remarkable brain responses" have been found by a University of Michigan medical researcher who is studying the effects of smoke on the nervous system.

Edward F. Domino, M.D., planted delicate electrodes in different portions of the brain to measure the activity of cells responding to the sense of smell.

He found that a "smoke signal" carried by the olfactory nerves caused unusually strong electrical discharges in the limbic, or "Old Brain," system. This is believed to be the seat of the emotions.

Early tests on dogs showed that smoke of any kind triggered widespread brain activity.

Since dogs have an unusually keen sense of smell, Doctor Domino and his associates repeated the experiments with monkeys, with essentially the same results.

Modern tranquilizer drugs also stimulate the Old Brain, Doctor Domino says. The drugs work through the blood stream, while smoke stimulates these areas through the olfactory nerves.

Embryoma of the Kidney (Wilms' Tumor)

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THE CALHOUN County Medical Society Cancer Registry, aided by five co-operating hospital cancer registries, has in eleven years ending January 1, 1960, added 4,570 accessions to its files. A search of the records produced only five cases of embryoma of the kidney (Wilms' tumor) which gives an incidence of about one in 900 of our cases. These cases are briefly reported in Table I.

Pathology.—Wilms' tumor arises in the embryonic neurogenic tissue. It more commonly occupies the superior rather than the inferior pole of the kidney. It is well outlined, globular, and large, having a capsule which is continuous with that of the kidney. This capsule tends to confine the neoplasm. As enlargement occurs the tumor becomes more bosselated and tense. It may occupy a good half of the abdomen.

TABLE I. EMBRYOMA OF KIDNEY (WILMS' TUMOR): REPORT OF FIVE CASES

Case No.	Date	Reg. No.	Age	Sex	Race	Radiation Therapy		Surgery	Pathology	Follow-Up
						Pre-Op.	Post-Op.			
1	Aug. 1948	502	4½ yrs.	M	W	1800 r	2100 r	Left transperitoneal nephrectomy Sept. 23, 1948.	Embryoma left kidney (Wilms' tumor).	Alive and well December 1959. Under development of lower ribs and upper lumbar vertebrae secondary to radiation therapy.
2	May 1950	506	9 mo.	F	W	none	2200 r	Left transperitoneal nephrectomy May 24, 1950.	Embryoma left kidney (Wilms' tumor).	Alive and well without evidence of recurrence December 1959.
3	May 1951	1134	6 wks.	M	W	none	none	Left transperitoneal nephrectomy May 2, 1951	Embryoma left kidney (Wilms' tumor).	Died May 11, 1951, 9 days postoperative.
4	June 1952	682	2 yrs.	F	W	none	3800 r	Left transperitoneal nephrectomy May 20, 1952	Embryoma left kidney (Wilms' tumor).	Pulmonary and osseous metastasis developed in 1 yr.; died January 1954
5	Aug. 1959	4387	9 yrs.	F	W	1000 r	2800 r	Left transperitoneal nephrectomy Sept. 3, 1959	Embryoma left kidney (Wilms' tumor).	Alive and well December 1959

Comment

Inspection of Table I shows the age of the patients to vary from six weeks to nine years. There were three female and two male patients, all white. It will be noted that in each case the left kidney was the one involved. There were two deaths. The patient in Case 3 died in the hospital nine days after surgery; the patient in Case 4 died two years after treatment and one year after pulmonary and osseous metastasis became evident.

Radiation therapy was used preoperatively in only two of the cases. We now believe that preoperative radiation therapy is desirable in most cases. The removal of a large tumor can become a surgical tour de force that lessens the patient's chance for survival. Preoperative radiation therapy shrinks the tumor rapidly and delays surgery only a little.

Symptoms and Physical Findings.—Three per cent of all tumors palpable in the renal area prove to be Wilms' tumor. The tumor is usually discovered by the mother, or by the physician on routine examination. Microscopic hematuria is occasionally found. A low grade fever may be present, probably due to degeneration of the tumor. Pain is a late symptom. Examination reveals a non-tender hard mass filling the renal fossae and, depending upon size, at times extending beyond the costal margin. If large, the tumor may be lobulated. Ordinarily it is rounded or ovoid.

Roentgenographic Examination.—Various techniques may be used, including the use of excretory urography, retrograde pyelography, aortography, tomography, and perirenal air. In our experience the plain

abdominal x-ray film, supplemented by excretory urography, has been sufficient to establish diagnosis. X-ray of the chest to exclude metastasis is desirable before treatment is started.



Fig. 1. Intravenous urogram, Case 5, illustrating typical distortion of left renal collecting system.

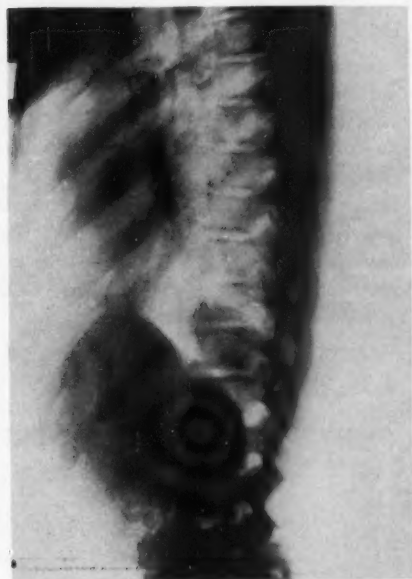


Fig. 4. Roentgenogram of spine, Case 1, showing changes in upper lumbar spine secondary to irradiation.

We mention renal biopsy by puncture only to condemn it. It is a procedure which may spread the tumor and should not be used.

Treatment.—We believe that preoperative irradiation of the tumor and transperitoneal nephrectomy, followed by postoperative irradiation, is the treatment of choice. The tumor is extremely radio-responsive. A short course of preoperative radiation therapy reduces the size of the tumor markedly, makes removal easier for the surgeon, and therefore probably reduces the likelihood of squeezing out cancer cells into the circulating blood and lymph streams at the time of operation.

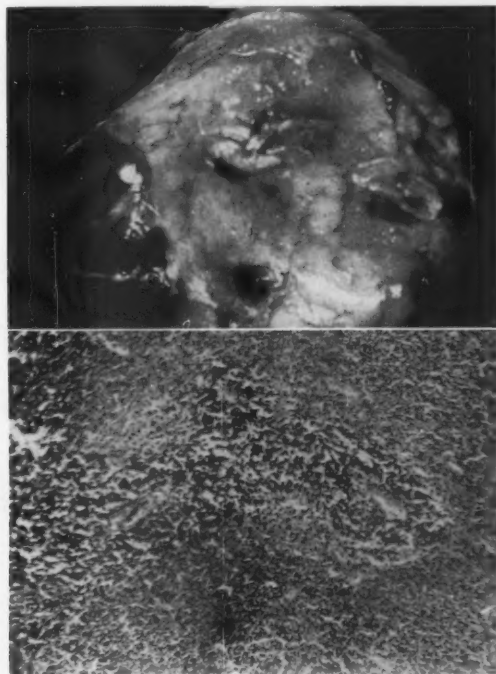


Fig. 2. Gross specimen left kidney, Case 4.
Fig. 3. Histologic appearance of tumor, Case 4.

In performing nephrectomy, the transperitoneal route is used. The incision generally extends from the costal margin to the pubis. The intestine is removed from the abdomen and carefully covered with packs. This allows good exposure of the flexure. The lateral peritoneum is incised and the flexure mobilized. The renal artery and vein are clamped, divided and ligated as soon as technically possible. After this, removal of the kidney with the tumor is made easier. Reperitonization of the fossae is accomplished if possible. If difficulty is encountered the incision may be extended into the chest to give more adequate exposure. In the cases reported we have not found this technique necessary.

Present Day Management of Thyroid Nodules and Malignancy

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SURGERY of the thyroid gland has changed radically in the past several decades. In earlier years, thyroid surgery was directed for the most part to the correction of thyrotoxicosis and the removal of large colloid or multinodular goiters, whereas it is now directed primarily against thyroid malignancy. Currently, much of the thyroid surgery consists of removal of nodules because their histologic nature is unknown. This surgery can be considered as a form of "preventive" surgery, for its purpose is the detection and removal of thyroid malignancy in its early stages.

There are certain features concerning the frequency of occurrence of nodules of all varieties in the thyroid gland, the actual frequency of malignant nodules, and the natural history of thyroid malignancy which have made present day surgery of the thyroid controversial. This pertains especially to (1) which nodules should be removed and (2) how extensive surgery should be when the presence of thyroid malignancy is established. As in all of medicine, practices vary with individual situations and undergo metamorphosis as experience and knowledge increases and as the clinical characteristics of a disease may change. It is always necessary to maintain an open mind, repeatedly evaluate results, and be willing to change one's practices if evidence so indicates. Yet, the fact that many variables often effect a given situation, makes it possible to achieve approximately the same results even though the plan of treatment varies.

We would like to present our current policies of managing thyroid nodules and malignancy along with the data upon which these practices are based. These

policies are not followed by all physicians who have a special interest in this field of medicine. It is probable that certain practices are not sufficiently vital to affect ultimate results. In a number of instances, their true value must await time to accumulate sufficient statistical information. It must be emphasized that, as data has accumulated year by year, our attitude in treating thyroid malignancy has become more radical.

Why Remove Thyroid Nodules?

In general, we believe that most discrete thyroid nodules should be removed. It is well known that there is no reliable test which will indicate whether or not such a nodule is malignant. The risk of thyroid surgery from a mortality standpoint is well under one per cent, whereas the risk of thyroid malignancy being present approximates four per cent. The morbidity of thyroid surgery is low and should not cause significant disfigurement. The natural history of thyroid carcinoma is such that many nodules which prove to be malignant have been known to be present for five years or more without metastases, so that the duration of the presence of the nodule is not a reliable guide. The presence of benign thyroid nodules in other members of the family does not rule out the presence of a malignant nodule in a given patient.

The figure of 4 per cent is generally accepted as indicating the statistical chance that a given clinically discrete nodule of the thyroid may be malignant. This is the figure which studies of large numbers of unselected patients have provided.¹⁻³ This figure also approximates that which Mortensen⁴ found for the incidence of thyroid malignancy in nodular thyroids found in 1,000 consecutive autopsies.

The incidence of thyroid carcinoma may be increasing, especially in the younger age groups.⁵ Numerous variables preclude a definite answer to this



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question. It is of interest to observe that in recent years in our institution, nearly half as many patients with carcinoma of the thyroid have been seen annually, as those afflicted with carcinoma of the stomach or pancreas.

Which Thyroid Nodules Should be Removed?

The statement is frequently made that many patients are seen with thyroid nodules, and yet few patients with thyroid malignancy are seen. In addition, the fact that we now consider which thyroid nodules should be removed contradicts the statement made above that, in general, all discrete nodules should be removed. Thus, this is a controversial matter and deserves consideration.

There are no dependable gross criteria for distinguishing isolated malignant nodules from benign nodules of the thyroid. Only in the late stages of thyroid malignancy can one be sure of the preoperative diagnosis, that is, in patients with an obvious malignant thyroid mass with metastases. The risk of thyroid surgery is a fraction of one per cent whereas the likelihood of carcinoma being present in a discrete thyroid nodule is at least 4 per cent. Therefore, surgery is indicated for a discrete thyroid nodule in a patient whose health is otherwise satisfactory. The morbidity of thyroid surgery is sufficiently low as not to be a significant factor.

The fact that relatively few physicians care for patients who actually die from thyroid carcinoma has also led to a commonly held belief that carcinoma of the thyroid, even if present, is usually not a significant lesion. It is true that the common varieties of thyroid carcinoma, the papillary and follicular varieties, have a natural history that usually extends over a period of many years.⁶⁻⁸ Even though microscopic evidence of papillary or follicular carcinoma is present, it does not mean the individual will die of this disease. These facts plus the infrequent experience with patients having thyroid malignancy has resulted, for many physicians, in an even greater attitude of disinterest in the lesion. However, there is a definite five year mortality varying in different reports, from approximately 3 to 20 per cent for even the less aggressive varieties of thyroid malignancy.⁹⁻¹⁰ More important is the fact that, as patients with follicular and papillary carcinoma are followed for periods of ten to twenty years and longer, the mortality from the condition reaches figures which are more alarming (as high as 25 to 50 per cent mortality).⁹⁻¹² Five year survival figures do not provide an accurate appraisal of curability for this disease. A malignant lesion which can be recognized

and cured in earlier stages is not one to neglect but one to approach more vigorously. Why emphasize ultra-radical procedures for late stages of malignancy when much more can be accomplished with less detriment by "preventive" surgery (surgery for thyroid nodules) and adequate but less mutilating surgery in earlier stages of malignancy?

However, wholesale thyroid surgery, in an effort to detect and treat thyroid malignancy, can be avoided. It is possible to effect selection in preventive thyroid surgery.¹³ The two most common situations that lead to difficulty in deciding whether or not to proceed with surgery are (1) the presence of palpable irregularities on the surface of the thyroid gland rather than discrete nodules and (2) the presence of thyroiditis. We do not believe thyroidectomies for glands containing only palpable surface irregularities will result in a gratifying number of malignancies. An examiner soon can distinguish these irregularities from the discrete well-delineated nodule. It is usually possible to detect with a high degree of accuracy, the presence of thyroiditis, by correlating the patient's history with physical findings. Patients having a history of recent sore throats, of recurrent throat inflammation or of repeated painful, diffuse, tender swelling of the thyroid gland, are likely to be suffering from thyroiditis, especially if there is a diffuse enlargement of one or both lobes without the presence of discrete nodules. Although a few patients with struma lymphomatosa have been found to also have a thyroid malignancy, this combination is rare and the data as of now does not seem to warrant extensive thyroid surgery for this condition.¹⁴ The patient's health otherwise should be satisfactory before proceeding with "preventive" surgery for a thyroid nodule which has only a statistical chance of being malignant.

There are certain categories of patients for whom we believe surgery is mandatory because of the high incidence of thyroid carcinoma in thyroid nodules when present in such patients. These include (1) individuals in the second and third decades of life and (2) male patients found to have a thyroid nodule. Clark¹⁵ and others^{16,17} have reported that most patients under the age of twenty having thyroid carcinoma, had received radiation therapy to the neck area in infancy. A history of previous radiation therapy to the neck or adjacent areas is ominous for a patient having a thyroid nodule.

The presence of multinodular thyroid tissue frequently presents a problem to the clinician as to whether or not surgery should be carried out. These are usually female patients. The patient frequently has

been aware of a nodular goiter for many years. In general, if a dominant nodule is present or if one or more nodules has been enlarging, surgery is advised whether the process is unilateral or bilateral. If the gland has the palpable features of diffuse indistinct irregularities, the patient is re-examined at intervals or treated medically.

We have had considerable experience with the use of scintograms for patients with thyroid nodules.¹⁸ In general, we have found them to be of limited help in making a decision for or against surgery for thyroid nodules. Clinical features, as previously discussed, have been of much greater value.

A scintogram, theoretically, might differentiate malignant from benign lesions inasmuch as malignant nodules should show evidence of little or no function. Functioning or hyperactive nodules ("warm" or "hot" nodules) would be expected to be benign, whereas non-functioning nodules ("cold" nodules) might be malignant. The examination has been found to have limitations, however. The fact that the radioactive iodide uptake over a nodule is approximately the same as the remainder of thyroid tissue ("warm" nodule) can be attributed to (1) the presence of normal thyroid tissue around the nodule so that the nodule does not displace normal thyroid tissue, (2) the nodule being too small (under 1 cm.) to produce a significant defect on the scintogram, or (3) the additive effect of decreased function of a nodule (as does rarely occur in follicular carcinoma) with activity of surrounding normal thyroid tissue. Thus, "warm" nodules usually are actually "cold" nodules which do not alter the scintogram for one reason or another and whose true function is, therefore, not shown by the scintogram.

A "cold" nodule may be a malignant or a benign lesion; the scintogram does not distinguish between the two. The fact that nearly all discrete palpable thyroid nodules are "cold" has made the scintogram especially of limited value for many patients.

Although a "hot" nodule indicates absence of carcinoma and that surgery is unnecessary, discrete "hot" nodules have been uncommon in our experience. The fact that even a few "hot" nodules may be identified does make the examination of value, however. Actually, the scintogram has been of greatest value in enlarging thyroid nodules. If such nodules are benign, they are more likely to be "hot" on the scintogram; if "cold," they definitely must be removed surgically.

The use of thyroid medication to differentiate benign from malignant thyroid nodules has been of occasional but not consistent help. If the nodule clinically

appears to be an area of irregular but normal functioning thyroid tissue, or an area of thyroiditis, the administration of thyroid frequently results in disappearance of the nodule. However, the dosage of thyroid should approximate three grains daily and, six to twelve months of therapy may be required before the desired changes occur. The administration of steroids is preferred if thyroiditis is strongly suspected. If there is a statistical chance of a discrete thyroid nodule being malignant, it would seem to be better to remove it, provided the patient's health otherwise warrants this.

What Is Proper Surgery for Thyroid Nodules?

A total lobectomy is the procedure now acceptable for surgery for thyroid nodules. The experience during earlier years when only the nodule was excised, demonstrated a high local recurrence rate due to inadequate removal in those patients in whom the nodule proved to be malignant.¹⁰ It is our policy to remove the entire lobe involved, the isthmus and the superficial portion of the contralateral lobe. Lymph nodes in the tracheo-esophageal groove, or adjacent to the nodule should also be removed. The entire isthmus, along with the superficial portion of each thyroid lobe is removed for centrally located nodules of the isthmus.

The operator must carefully examine all of the thyroid tissue other than that in the vicinity of the nodule for which surgery has been undertaken. Occasionally, another nodule is found in remaining thyroid tissue, although it had not been recognized in the preoperative examinations of the neck. In fourteen of our patients, such a nodule, not felt preoperatively but found at the time of surgery, proved to be malignant, whereas the nodule originally leading to surgery was benign. Thus, a wide excision of other nodules should be undertaken and this may require removal of nearly all of the second lobe after a total lobectomy carried out for the nodule felt preoperatively. In such instances, we usually leave a remnant consisting of the posterior part of the second lobe of the thyroid, if feasible. However, if the nodule in the second lobe is malignant on histologic study, the remaining thyroid tissue is usually removed to complete a total thyroidectomy. The operator should also palpate the neck laterally at the time of thyroidectomy to detect enlarged nodes. However, these nodes usually cannot be palpated with any greater accuracy than by the preoperative examination, unless the carotid sheath is opened and more extensive dissection carried out.

We have obtained real help from the pathologists

by frozen section examination of the nodule at the time of surgery. If a definite diagnosis of malignancy can be established, it is much easier technically and also from the patient's standpoint, to carry out additional neck surgery at this time rather than at a later date.

What Should be the Extent of Surgery for Thyroid Malignancy?

The desired surgery for carcinoma, in general, consists of a wide en bloc removal of the primary lesion along with all tissues in the regional routes of direct and lymphatic spread. The ideal operation, however, is rarely feasible because of the presence within the en bloc area of vital structures, the removal of which is undesirable or impossible. This is true for carcinoma of the thyroid for which an ideal en bloc procedure, from a cancer surgery point of view, would probably include removal of a segment of the trachea, all parathyroid glands, one or both recurrent laryngeal nerves and carotid arteries, removal of all structures in the anterior superior mediastinum, in addition to a total thyroidectomy and a classical radical neck dissection on one or both sides. Obviously, such a procedure is not sensible in view of the known natural history of carcinoma of the thyroid. Such a procedure would not increase the number of lives saved.

It is necessary then, to compromise by fitting the extent of the surgery to the individual lesion, carrying out as wide a dissection as is consistent with a reasonable operative risk, postoperative life for the patient and cure rate.

The desirable extent of surgery for carcinoma of the thyroid is still being developed. Sufficient experience does not yet permit a definite answer to this question. There has been a tendency to utilize more radical surgery for the lesion because, with the accumulation of experience, it has become evident that the lesion does kill and is not as innocuous as once believed. Since this type of malignancy often spreads slowly, we do have the opportunity to cure a high percentage of the patients by the removal of thyroid nodules when they first are recognized. Ultra-radical surgery has not found a place in the treatment of this malignancy, for it lends itself to radical surgery in early stages. Ultra-radical surgery in late stages saves few lives. As previously stated, the minimal amount of surgery for carcinoma of the thyroid should be a total lobectomy. Although some individuals can be cured by the excision of a malignant nodule only, experience in earlier years demonstrated that local recurrences were frequent and could lead to death.

Adequate removal of the primary lesion is the most important principle in the surgical management of thyroid malignancy. Patients that succumb from thyroid malignancy, die either from local recurrence or distant metastases, not from cervical node metastases.

TABLE I. THYROID CARCINOMA: FREQUENCY OF CERVICAL NODE METASTASES

	Patients Examined	Nodes Negative	Nodes Positive
Cervical nodes palpable	31	2	29 (94%)
Cervical nodes not palpable	40	26	14* (35%)
Totals	71	28	45 (62%)

*In five of the fourteen patients, positive nodes removed when cervical lymphadenopathy appeared six months to ten years after original thyroid surgery.

If cervical nodes are palpably enlarged preoperatively, the nodes do contain metastases in nearly all cases; that is, in over 90 per cent, in our experience (Table I).²⁰ It is our opinion that a radical neck dissection be carried out for such patients. A radical neck dissection is carried out rather than the removal only of palpable nodes or groups of nodes. Unless a radical neck dissection is carried out in these patients, many require a repeated removal of other nodes which become palpable later. It is conceivable that malignancy can spread from residual malignancy remaining in lymph nodes not removed. Thus, a radical neck dissection is performed at the time of thyroid surgery for these patients.

Experience thus far has not been great enough to determine whether or not a neck dissection will significantly help those patients with a thyroid carcinoma whose cervical lymph nodes are not palpable. At least one-third of such patients do actually have metastases in the cervical nodes, in our experience.²⁰ We also have found that at least 10 per cent of these patients later develop palpable lymph node metastases which require surgery. Therefore, we have preferred to carry out modified neck dissections for many of these patients. It is probable that by such a practice we can hope for no more than a few percentage points of increased cure rate for these patients. Whether or not as much can be accomplished by waiting until cervical nodes become palpable before neck dissections are done is not established. It is conceivable that the period of delay before neck dissections are performed may permit malignancy to spread elsewhere in the body.

Importance of Pathologic Variety in Management and Prognosis

The pathologic variety of thyroid carcinoma is important in predicting future behavior of the neoplasm

and in prognosis. Most lesions are either papillary or follicular adenocarcinomas. Although a combination of these histologic varieties can be found in a majority of these lesions, one of the two types usually predominate with the papillary feature occurring most frequently. Papillary adenocarcinomas metastasize most frequently only to cervical lymph nodes and proper neck surgery can control the lesion in a majority of patients. Follicular adenocarcinomas may also metastasize to distant sites through the blood vessels and, therefore, are associated with a less favorable prognosis than the papillary variety.

A few of the follicular carcinomas are poorly differentiated. These are sometimes referred to as adenocarcinomas alone. They behave more like adenocarcinomas elsewhere in the body. Extensive local spread and distant metastases can occur from this lesion within a period of months. If not treated, this disease is lethal within a matter of months or several years. If attacked early, it can be cured. Therefore, this group deserves aggressive surgical treatment.

The pathologist occasionally makes the diagnosis of a malignant adenoma or a sclerosing adenocarcinoma. Malignant adenomas metastasize via the blood stream when they do spread. The occult sclerosing carcinoma can metastasize occasionally, usually to cervical lymph nodes.

A few patients with thyroid malignancy have an undifferentiated carcinoma. This variety usually occurs in the older age group. It spreads rapidly throughout the neck and has a poor prognosis. The patient is often inoperable for cure when first seen.

If the pathologist makes a definite diagnosis of carcinoma of the thyroid by frozen section study at the time of surgery, we usually proceed with additional neck surgery at that time. The extent of this surgery varies, depending on the findings of the preoperative examination and gross findings in the neck at the time of surgery. We personally are not too interested in the specific histologic variety at this time. It is sometimes difficult to be entirely certain of the type of lesion by frozen section. It is not difficult to carry out the additional surgery at this time. At least one-third of the patients do have metastases to the cervical nodes even though nodes are not palpable, not considering the pathologic variety of the malignancy. We prefer to carry out radical surgery in early stages rather than late stages of the disease. This usually includes a neck dissection on the side of the lesion and a total thyroidectomy.

Many surgeons do not perform a neck dissection unless cervical nodes are palpable, especially for the

papillary variety of thyroid carcinoma. The majority of thyroid malignancies are predominantly papillary from a histologic evaluation. They tend to remain in the neck area and are frequently very slow to enlarge and metastasize. Thus, these lesions do require adequate neck surgery but mutilating procedures are usually unnecessary. Patients with this type of malignancy can frequently be cured even though cervical node metastases appear later repeatedly. Beahrs¹⁰ has reported that in no case of papillary adenocarcinoma has it not been possible to control cervical metastasis even though repeated neck surgery is not required for the clinical appearance of cervical metastases at later dates. It has been our preference, nevertheless, to carry out neck dissections, often a modified neck dissection, in early stages of the disease. Meissner, Colcock and Achenbach²¹ were able to find no consistently reliable factor that the pathologist could use to predict whether or not cervical lymph node metastases are likely to be present. A few of the papillary lesions spread widely early and are lethal. Winship and Rosvoll²² state that special operations devised solely for the treatment of papillary carcinoma are illogical and unrealistic.

The Value of a Modified Neck Dissection

It appears to us that there is a real place for a modified neck dissection in surgery for carcinoma of the thyroid. By a modified neck dissection, we refer to a procedure which differs from the standard radial neck dissection in that the sternocleidomastoid muscle and the submaxillary gland area are preserved. However, the procedure does include a dissection of the posterior triangle of the neck and the removal of the jugular vein and associated lymph nodes. This then results in less neck deformity because the muscle is preserved and because it is not necessary to carry the incision so high if the removal of the submaxillary gland area is omitted. Unless there is gross evidence of widespread metastatic disease in lateral neck areas, it has not appeared to us necessary to carry out the more radical procedure. Our present practice with respect to the utilization of neck dissection for this disease is outlined in Table II.

Important areas of dissection in the neck dissection for carcinoma of the thyroid are the tracheo-esophageal groove region and tissue adjacent to the thyroid superiorly and inferiorly in the anterior superior mediastinum.²³ It seems incongruous to carry out a radical procedure to remove nodes in the lateral neck areas and yet neglect the lymph nodes in the area adjacent to the thyroid. Thus, tissues containing lymph nodes

THYROID NODULES—BLOCK AND BRUSH

in these areas are removed as carefully and as completely as possible. It is usually possible to preserve the recurrent laryngeal nerve on the side of the lesion but it may be necessary to sacrifice the parathyroid glands on the side of the lesion.

Occasionally, metastases are present in cervical lymph nodes bilaterally. This may be in the form of spread across the midline via lymphatics, especially in the anterior superior mediastinum or, as a result of additional primary neoplastic lesions in the opposite lobe of the thyroid gland (multifocal carcinoma). Thus, it is important to look for lymphadenopathy on both sides of the neck. Frozen section examination can be made of suspicious nodes on the contralateral side. If there is good evidence for metastasis to the opposite side of the neck, a modified neck dissection is carried out on that side, usually preserving the jugular vein.

The mediastinum is another area of lymph node spread from carcinoma of the thyroid. If a neck dissection is done, tissue containing lymph nodes inferior to the thyroid gland in the anterior superior mediastinum, can be and should be removed. Occasionally, gross evidence of mediastinal involvement is present deeper in the mediastinum in a patient otherwise operable. In such instances, the sternum is split to permit a more adequate mediastinal dissection. Although McClintock²⁴ reports the finding of metastasis to mediastinal nodes in 76 per cent of seventeen patients with thyroid carcinoma for whom a dissection of the anterior mediastinum was performed, we have not thought the routine dissection of the mediastinum after splitting the sternum necessary. This more extensive procedure carries a greater risk and too often the patient is inoperable for cure if mediastinal involvement is greater than that which can be removed via the neck incision.

Should a Total Thyroidectomy be Done for Thyroid Carcinoma?

We prefer to carry out a total thyroidectomy for most patients with carcinoma of the thyroid. A major reason for this is the significant frequency with which additional foci of malignancy are found in the opposite lobe of the thyroid gland; that is, approximately 20 per cent reported by Black and associates,²⁵ which also corresponds with our experience. Intrathyroidal spread of the primary malignancy may occur also. A second reason for performing a total thyroidectomy is that in the few thyroid carcinomas that will take up radioactive iodide, the uptake can be enhanced by absence of thyroid tissue. An additional

reason for a total thyroidectomy is to prevent later appearance of a new primary site for thyroid carcinoma later, a situation which has occurred in a few instances.

Some surgeons prefer to leave a remnant of thyroid

TABLE II. A PLAN FOR NECK DISSECTIONS IN THE SURGICAL TREATMENT OF THYROID CARCINOMA

In All:
Remove nodes adjacent to thyroid and in superior mediastinum through neck incision
Radical Neck Dissection:
Palpable cervical metastases present but
—primary lesion operable
—distant metastases absent
Modified Neck Dissection:
Definite thyroid carcinoma on frozen section,
neck nodes not palpable, patient operable for cure
Positive nodes adjacent to thyroid, no palpable cervical adenopathy
More than minute area of thyroid malignancy on fixed sections,
no cervical adenopathy, do neck dissection as second operation
Significant cervical adenopathy questionable
No Neck Dissection:
Centrally located isthmus malignancy, no cervical adenopathy,
thyroid otherwise free of carcinoma
Minute area thyroid malignancy on fixed sections, no cervical
adenopathy
Malignant adenoma
Pathologic diagnosis malignancy questionable
Inoperable for cure locally or because of distant metastases

tissue along with the posterior portion of the thyroid capsule in place in the contralateral lobe of thyroid.²⁵ This is done to minimize the occurrence of hypoparathyroidism. Unless there is evidence of malignancy on this opposite side, it is usually possible to preserve parathyroid tissue here. Therefore, we have been removing all thyroid tissue as far as possible.

It is possible to remove all thyroid tissue surgically. However, occasionally a small remnant of thyroid tissue is left in the region of the pyramidal lobe or higher in the midline of the neck. These latter areas probably represent small remnants of thyroid tissue along the line of descent of thyroid tissue in the neck during embryonic development which had previously been without function.

Postoperative Management for Thyroid Malignancy

Following surgery for thyroid malignancy, it is wise to follow patients periodically. This is one malignancy for which real help can still be given even though metastases appear later.

If patients have had a total thyroidectomy, we usually obtain a scintigram post-operatively to identify the presence of any residual thyroid tissue for possible use later. Thus far, we have not thought radiation therapy postoperatively to be clearly of help. Therefore, it has been used only for extensive inoperable undifferentiated forms of thyroid malignancy.

If palpable lymph nodes later appear in the neck,

they are removed. In such instances, the entire group of nodes which may be present in the area are excised.

A few lesions, especially of the follicular variety, will take up sufficient radioactive iodide. If metastases develop from these lesions, administration of radioactive iodine will be of help.

Summary and Conclusions

1. Surgery of the thyroid is changing; removal of nodules is being emphasized. This has resulted in removal of thyroid malignancy in earlier stages.

2. Although the natural history of carcinoma of the thyroid frequently extends over many years, it can kill.

3. Most discrete thyroid nodules require surgery in patients having satisfactory health otherwise.

4. The presence of minimal palpable irregularities of the thyroid or evidence of thyroiditis producing thyroid irregularities, represent conditions for which surgery is usually not necessary. Selection for surgery is possible.

5. The scintogram has been of limited value to us in deciding whether or not a thyroid nodule should be removed. Surgery is not necessary for "hot" nodules, but such nodules are few in number.

6. A total lobectomy is the operative procedure indicated for a thyroid nodule.

7. The presence of additional thyroid nodules should be looked for at the time of surgery and adequately removed.

8. If the presence of carcinoma of the thyroid is established, a total lobectomy is the minimal operative procedure to be carried out and frequently a total thyroidectomy should be performed.

9. If a patient with carcinoma of the thyroid has palpable lymph nodes, a standard radical neck dissection should usually be performed.

10. If a patient with carcinoma of the thyroid does not have palpable cervical lymph nodes, at least one-third of the patients do contain metastases to the nodes and at least ten per cent later require removal of these nodes when they manifest themselves clinically. Therefore, we prefer to carry out more radical neck surgery in the early stages of this disease rather than later.

11. The modified neck dissection appears to be a satisfactory procedure for many selected patients with carcinoma of the thyroid.

12. The removal of lymph nodes in the tracheoesophageal groove and other areas when carcinoma is

present adjacent to the thyroid gland itself is important.

13. The majority of lesions of thyroid malignancy are predominantly papillary adenocarcinoma. This variety usually remains in the neck area and, therefore, can be cured by adequate local removal of the primary lesion in addition to cervical node metastasis, even though these metastases are extensive. Mutilating procedures are not necessary, however, and the surgeon may be more conservative in performing neck dissections in the absence of palpable nodes.

14. To date, we have not found routine mediastinal dissections worth the added risk involved in surgery for thyroid carcinoma.

15. Patients deserve repeated postoperative follow-up examinations indefinitely, for many of these patients still can be salvaged by proper additional treatment later, even though recurrences appear.

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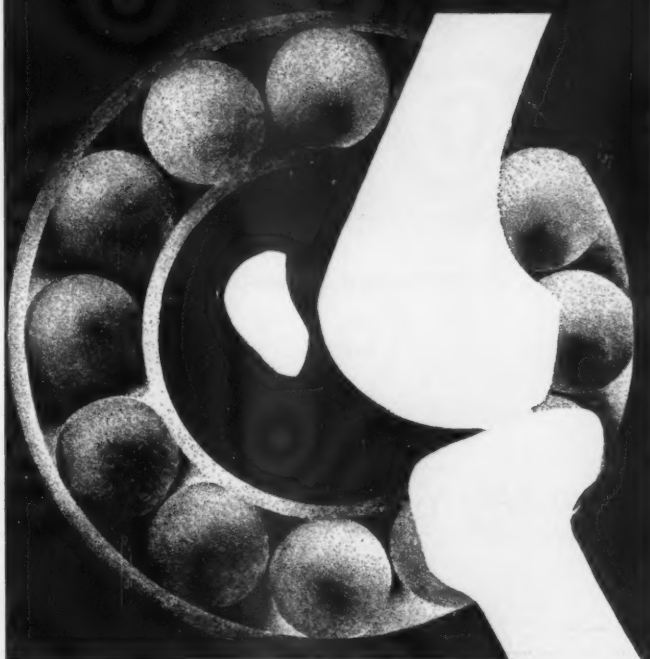
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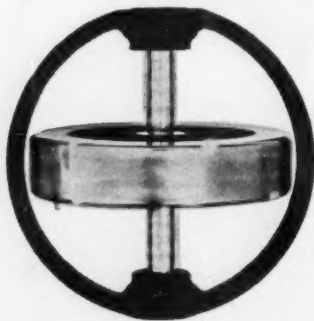
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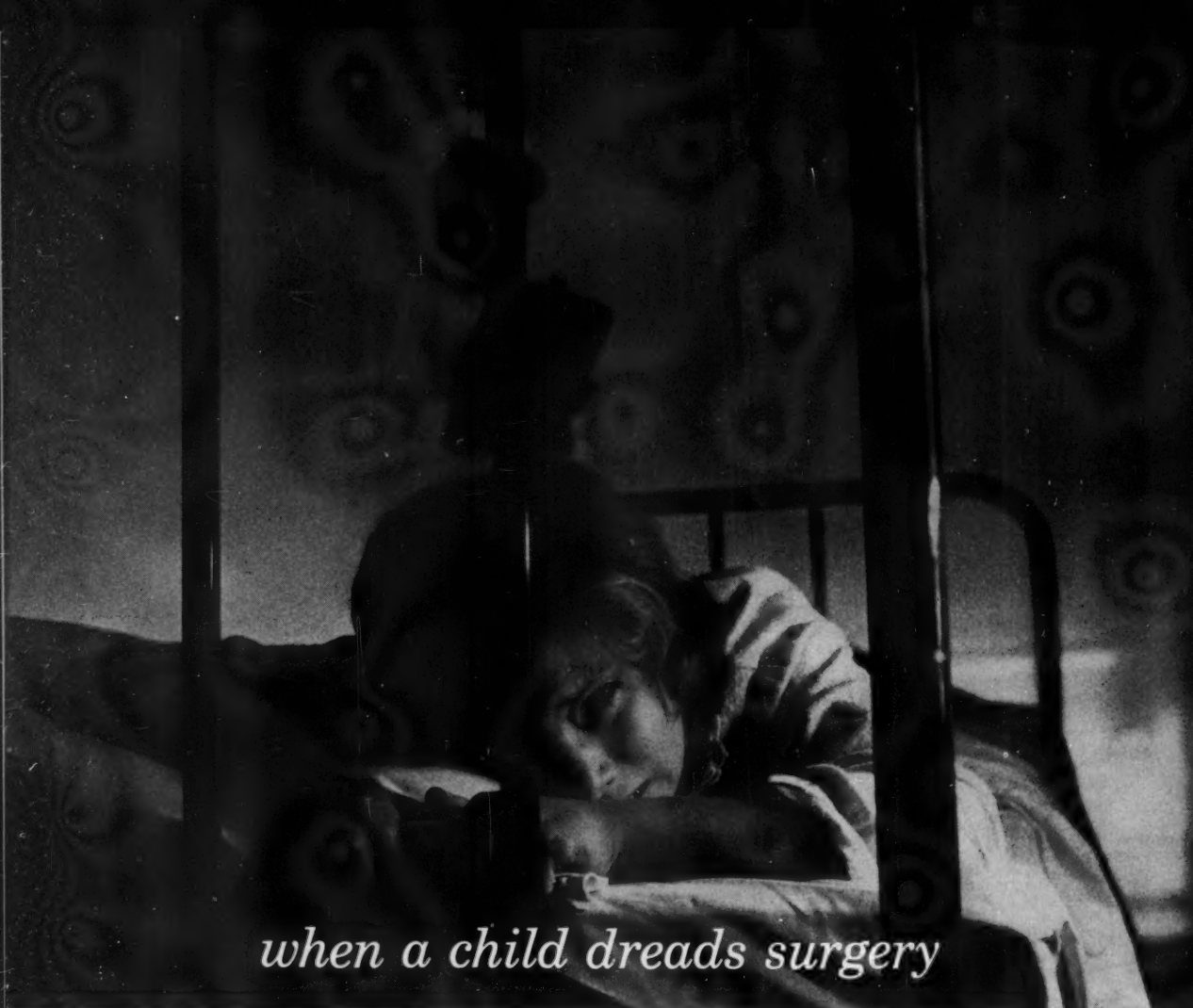
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Research at the Yates Memorial Clinic

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THE YATES Memorial Clinic was established in May, 1950 by the Southeastern Michigan Division of the American Cancer Society as a small model Cancer Detection Center to serve three primary purposes: to provide facilities for cancer detection examinations for persons in the surrounding communities, to conduct

detection of polyps of the large bowel and the value of the Papanicolaou smear in the detection of early malignancy of the cervix.

As mentioned in a previous publication in THE JOURNAL¹ persons accepted for examination are presumably asymptomatic and must provide the name of

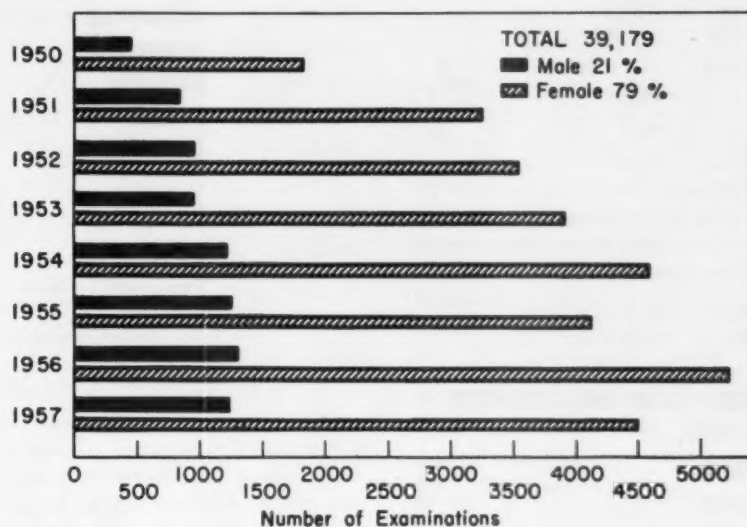


Fig. 1.

clinical research on the incidence of benign and malignant neoplasms in the general population, to evaluate the efficacy of various tests in the early diagnosis of cancer, and to act as an educational center where physicians might gain experience in the methods of cancer detection. It is the intent of this paper to elaborate on the clinical research being conducted at the Yates Clinic, particularly in regard to sigmoidoscopic examinations as a routine measure in the

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their private physician to whom a report of the examination is sent. A complete history is taken and a physical examination is performed including, in the female, a pelvic inspection with routine Papanicolaou smears of the cervix and vagina. Sigmoidoscopic examinations are routinely performed regardless of sex or age. The various examinations are performed by members of the staff of Wayne State University College of Medicine. Complete blood counts and urinalyses are performed on each patient and biopsy specimens are taken when indicated. Ear, nose and throat examinations with visualization of the vocal cords are made and roentgenograms of the chest are

obtained when symptoms warrant. The patient is not informed as to the diagnosis or recommended therapy at the Clinic, rather they are instructed to consult their private physician. Within fourteen working days

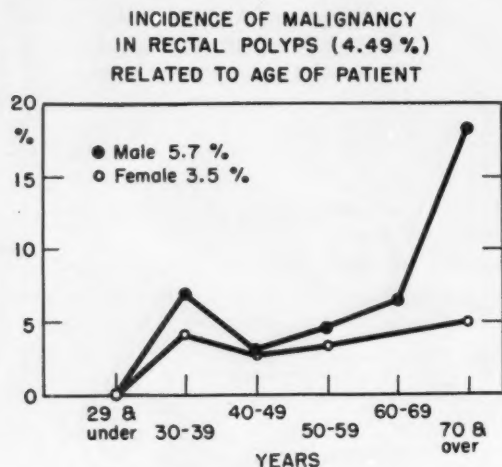


Fig. 2.

of the time of examination the report is sent to the private physician, and at the same time a card is mailed to the patient reminding him or her to consult their physician. Three months following the patient's

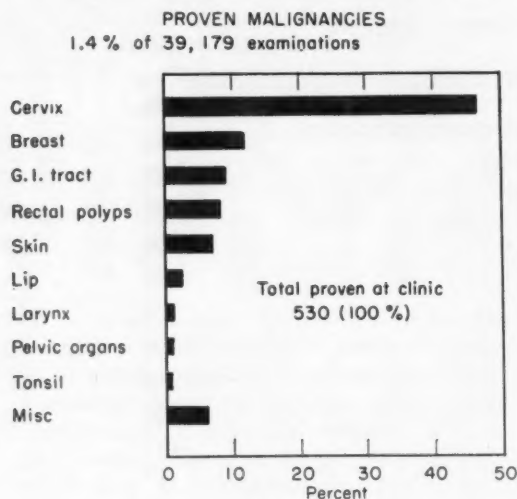


Fig. 3.

examination a follow-up letter is sent to the doctor requesting information on further diagnostic procedures and ultimate prognosis.

From the inception of the Clinic in May 1950

through December 1957 there have been 39,179 persons examined: 79 per cent being female and 21 per cent male (Fig. 1).

The age distribution of the examinees favors the younger age groups in that almost 50 per cent of the males and slightly more than 40 per cent of the females are under the age of 40 (Fig. 2). The age distribution is important in considering the incidence of pre-malignant and malignant diseases as both conditions, of course, are more common in the older age group.

39,179 examinations

SUSPECTED MALIGNANCIES 6,157 (100 %)
PROVEN 161 (2.6 %)

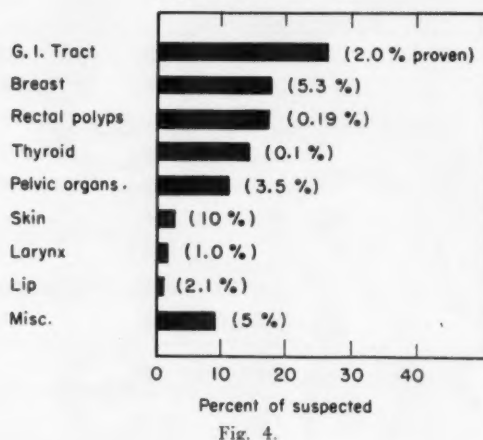


Fig. 4.

Of the total 39,179 individuals examined 530 or 1.4 per cent were identified as harboring cancer at the Clinic, proven either by biopsy or by operation within two to four weeks of the initial examination (Fig. 3). Of these proven malignancies almost 50 per cent involved the cervix, 12 per cent the breast, 9 per cent the GI tract, followed in decreasing order by rectal polyps, skin, lip, larynx, pelvic organs, tonsils, and a group of miscellaneous carcinomas including the prostate, pancreas, lung, et cetera.

In 6,157 instances, or 15.7 per cent, of the total number of persons examined the possibility of malignancy existed although it could not be proved at the Yates Clinic. The most common area of suspected malignancy was the gastro-intestinal tract comprising 25 per cent followed by breast (17.6 per cent), rectal polyps (17 per cent), and in decreasing order thyroid, pelvic organs, skin, larynx, lip, and finally a miscellaneous group (Fig. 4). A successful follow-up on these patients was accomplished in approximately 80

per cent and 161 additional cancers were diagnosed as a result of the initial Yates Clinic examination with the percentage breakdown by site as shown.

Combining the 530 cases of cancer proved at the Yates Clinic and the 161 cases suspected at the Clinic and proved by the private physician results in 691 or 1.8 per cent incidence of cancer discovered as a result of the "detection" examination. Of even greater significance is the fact that most of these cancers are found at an early stage while they are still localized and presumably amenable to therapy.

INCIDENCE OF MALIGNANCY OF POLYPS RELATED TO SIZE

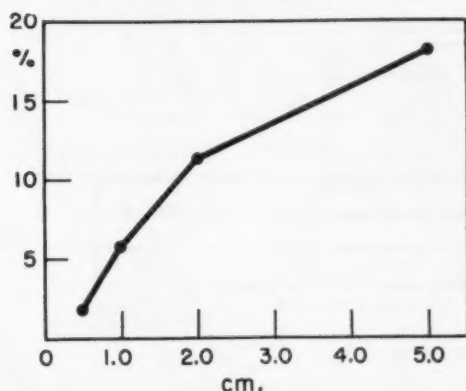


Fig. 5.

As a result of such a thorough examination many non-neoplastic diseases are discovered and as part of a public health measure these conditions are also reported to the patient's physician. In the 39,179 examinations, 59.6 per cent of the patients were discovered to have one or more non-neoplastic diseases, many of which had already been diagnosed and were under treatment by the family physician; 24 per cent of the examinees had no discoverable physical abnormality.

Statistics are available on the results of routine sigmoidoscopic examinations on 32,177 patients from May 1950 through December 1956. During this time interval 3.1 per cent of the patients were found to have rectal or colonic polyps (Fig. 5). There was an overall incidence of 5.6 per cent in males and 2.4 per cent in females. It is of interest to note that the incidence of polyps was almost twice as high in males as in females in every decade, and over the age of fifty the incidence in males is about 10 per cent.

Pathologic examinations were made by members of the Department of Pathology of Wayne State Univer-

sity College of Medicine. A pathologic diagnosis of malignancy was made in forty-four instances resulting in an overall malignancy rate of 4.49 per cent considering all polyps whether biopsied or not (Fig. 6).

INCIDENCE OF CASES BY DECADE

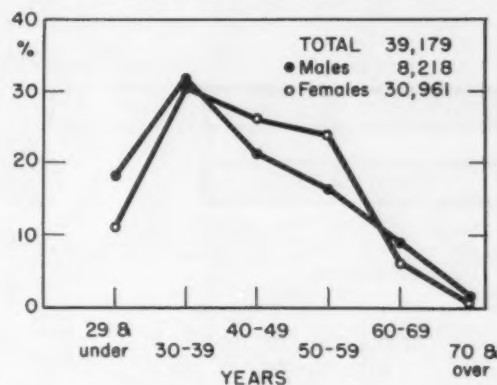


Fig. 6.

Since only about one-half of the polyps discovered at the Clinic were biopsied the incidence of malignancy of those biopsied is around 9 per cent. There was a higher rate of malignancy in male patients than in females and the incidence increased with age. The decline in incidence of malignancy in women over

INCIDENCE OF POLYPS FOUND (3.1 %) in 32,177 sigmoidoscopies

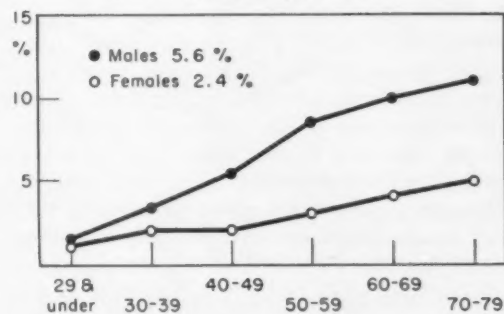
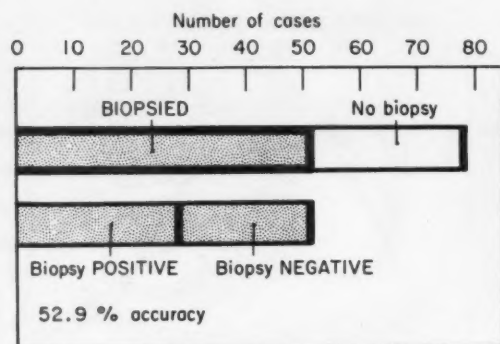


Fig. 7.

seventy years of age is undoubtedly due to the small number of patients examined and therefore is not statistically important.

The incidence of carcinoma in polyps increased strikingly with the size of the polyp (Fig. 7). In polyps under 0.5 cm. in greatest diameter 2 per cent

were proved histologically to be malignant. In the 0.6 to 1 cm. group 5.9 per cent were malignant; in the 1.1 to 2 cm. group the rate was 1.6 per cent; and in the 2.1 to 5 cm. group it was 18 per cent.



CORRELATION OF BIOPSY RESULTS
WITH SUSPICIOUS SMEARS

Fig. 8.

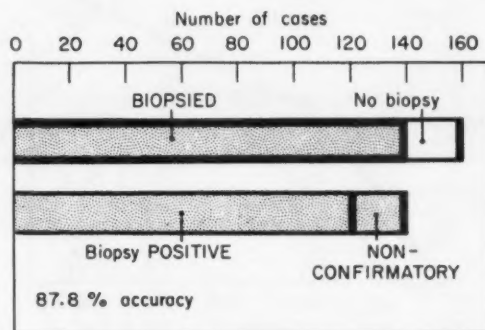
One of the cancer detection methods which has been under close scrutiny at the Yates Clinic and one which has added materially to the early diagnosis and potential curability of cervical cancer is the Papanicolaou smear. During a four and a half year period beginning in May 1951, 15,832 women underwent routine Papanicolaou smears of the cervix of which 160 were reported as positive and seventy-seven suspicious. In 140 of the 160 positive smears, biopsy was obtained and 123 proved by histological examination to be carcinoma (Fig. 8). This results in an accuracy of 87.8 per cent since it is usually considered that the percentage of positive smears confirmed histologically constitute the "specificity" of the test. As mentioned by Dale² it should be pointed out that the smear may be more correct than the biopsy because the material constituting the smear may be more representative and may contain neoplastic cells from an area missed by the biopsy; cold knife cone biopsy diminishes the possible error in this regard.

In the seventy-seven cases with suspicious smears there were fifty-one biopsies, twenty-seven or 52.9 per cent of which were positive (Fig. 9). The importance of the suspicious smear cannot be over emphasized and is well-illustrated in this study.

The value of exfoliative cytology as a screening procedure is well-illustrated by the number of instances in which no clinical evidence of cancer of the cervix was present. Of the total of 147 cases of squamous cell carcinoma sixty-three or 42.8 per cent

were detected first by smear examination. Contrary to what might be assumed these were not all pre-invasive. As seen in Figure 10 they have been separated into three groups: pre-invasive, invasive, and those in which the presence or absence of invasion cannot be definitely decided. As would be expected, in the pre-invasive group a high proportion (approximately 75 per cent) were first detected by smears. The most significant figure is seen in the frankly invasive group of carcinomas; here over 23 per cent were clinically undetectable and would have been missed completely in the absence of cytological studies.

A study is now being completed in which 100 con-



CORRELATION OF BIOPSY RESULTS
WITH POSITIVE SMEARS

Fig. 9.

secutive patients with positive Papanicolaou smears of the cervix have been followed very closely and although on initial consideration only about 58 per cent of the smears are substantiated by biopsy, an exhaustive study of these few patients reveals this correlation between smear and ultimate tissue diagnosis to have risen to around 92 per cent. This study would indicate that a patient with a positive Papanicolaou smear must be considered to harbor a malignant neoplasm until proven otherwise. Appropriate steps to be taken to substantiate the positive Papanicolaou smear are a punch biopsy and if negative a cold cone section of the cervix. In instances where this is negative, a dilation and curettage should be considered, for there are several instances where the Papanicolaou smear indicated an endometrial carcinoma. If these procedures do not reveal malignancy the patient should be observed closely at periodic intervals and repeat smears and biopsies taken.

Conclusion

1. Some of the clinical research being conducted at the Yates Memorial Clinic is presented, particularly in regard to sigmoidoscopic examination as a routine

detection of early malignant or premalignant lesions of the colon followed by their prompt removal that the cure rate of carcinoma of the colon will be significantly improved.

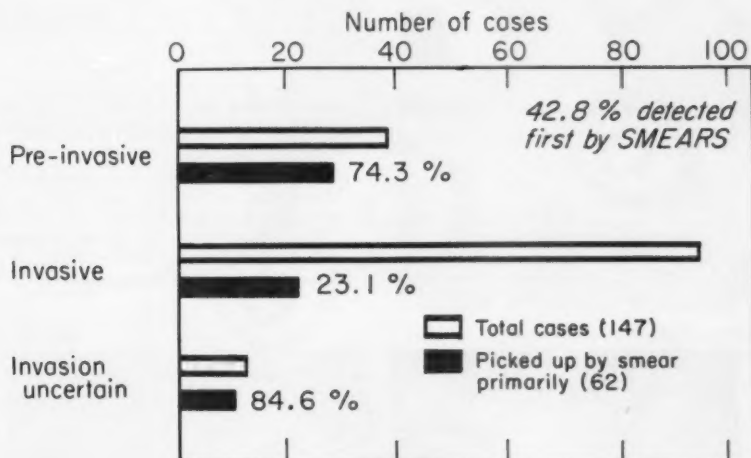


Fig. 10.

measure in the detection of polyps of the large bowel, and the value of the Papanicolaou smear in detection of early malignancy of the cervix.

2. Of 39,179 patients examined, 1.8 per cent were demonstrated to be harboring malignant disease.

3. This study demonstrates that the frequency of colonic polyps and the incidence of malignancy increases with the age of the patient and is greater in men than in women. It also points out the relationship between malignant change in the polyp and size of the polyp in that the larger the polyp the greater the incidence of malignancy. Nearly 20 per cent of all polyps over 1 cm. in greatest diameter are malignant on histological examination.

4. We believe this study demonstrates that a sigmoidoscopic examination should be performed on all adult patients particularly over the age of forty as part of the routine physical examination. It cannot be emphasized too strongly that it is only by the

5. In the study of 15,832 women undergoing routine Papanicolaou smears of the cervix an accuracy of positive smears of 87.8 per cent is demonstrated.

6. It is pointed out that 42.8 per cent of 147 cases of squamous cell carcinoma of the cervix were unrecognized by the clinician and first suspected by a positive Papanicolaou smear; 23 per cent were early invasive carcinoma.

7. Any patient with a positive Papanicolaou smear must be considered to harbor a malignancy until proven otherwise.

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Neoplastic Involvement of the Colon Residing in a Scrotal Hernia

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WHILE THE incidence of carcinoma of the colon is rather small, it should be kept in mind in all cases of hernia.

Case Report

The patient was a white man aged sixty-seven, a manufacturer's agent, who was admitted to Highland Park General Hospital on July 14, 1959, with the complaint of a large

and vomiting, gave a history of tarry stools on several occasions with weight loss of approximately 10 pounds.

Past History.—Patient had suffered a CVA (subarachnoid hemorrhage) seven years ago and had been incapacitated since that time with weakness of the right side.

Physical examination revealed a well developed, moderately well nourished white male who showed marked pallor and there was residual weakness of the right side. The chest



Fig. 1. Barium enema roentgenogram with rectal ampulla, sigmoid, and lower descending colon distended with barium with a large part of the lower colon filling the hernial sac. Ill-defined constriction was seen in the sigmoid area.



Fig. 2. A right anterior oblique spot film showing the cannulization of the barium stream with overhanging edges characteristic of the napkin ring deformity of annular carcinoma. The lesion measures 5 cm. in length.

mass in the left groin extending into the scrotum, clinically appraised as a large non-reducible scrotal hernia containing several loops of bowel.

The patient stated that two years before entering the hospital after lifting a heavy object, he noticed a small mass in the left inguinal area which persisted and gradually became larger. Three months prior to admission the mass descended into the left scrotum and he experienced a great deal of pain with pronounced tenderness. At that time he began to notice a troublesome anorexia and although restricting his diet to cereal and milk, he experienced nausea

and vomiting. The remainder of the physical examination was negative.

Laboratory studies made at the time of entrance to the hospital, revealed a total white count of 5,000 with 62 per cent PMN's and 28 per cent lymphocytes. Hemoglobin

was 5.0 grams with 20.5 microhematocrit. Blood smear showed marked hypochromia, anisocytosis, poikilocytosis, and microcytosis. The urine, blood sugar, NPN and Kline all were negative but a slight trace of blood was found in the stool by the guaiac test.

The clinical impression was "indirect inguinal hernia" with marked blood loss from unknown causes. Due to the marked anemia, herniorrhaphy was delayed and transfusions were started. It was quite difficult to bring the hemoglobin up to normal levels and still more difficult to maintain it.



Fig. 3. A postevacuant x-ray study of the scrotal area. Arrows point to the lesion overlapped by a redundant loop of sigmoid. There was no appreciable obstructive effect noted on the proximal colonic contents.

Because of the unusually low hemoglobin and marked changes in the red blood cells, it was decided to study the patient to rule out possible neoplasm or other blood destructive lesion.

A chest roentgenograph on July 15, 1959, revealed moderate cardiac enlargement and the lung fields were clear. A barium enema made July 20, 1959, demonstrated the colon extending in a sharp loop into the large hernial sac. The entire sigmoid and a portion of the descending colon were entrapped in the hernial sac. In the sigmoid colon there was a napkin ring deformity with over-hanging edges suggesting an annular carcinoma of the colon. Fluoroscopically the lesion did not appear to be adherent to the adjacent hernial sac (Figs. 1, 2, and 3).

Following numerous blood transfusions the hemoglobin was finally brought up to 12.4 grams and surgery was done on July 27, 1959.

Because of the history of previous subarachnoid hemorrhage, the anemia, and an emphysematous chest with chronic bronchitis, the anesthesia department was somewhat hesitant about giving general anesthesia. Accordingly, the patient was given continuous epidural anesthesia.

Since the status of the scrotal lesion was unknown, it was felt that an inguinal incision should be made first in order to free up the lesion from the sac and surrounding tissue. On opening the hernial sac, the napkin ring lesion presented itself. During this early portion of the operation labored respiration and a sharp blood pressure drop occurred, necessitating continuous use of antihypertensive drugs.

Approximately 10 centimeters of sigmoid was found to

be in the sac both proximal and distal to the lesion and there was no adherence of the lesion to the sac. Because of the precarious condition of the patient it was decided to resect through the hernial sac taking 8 to 10 centimeters of bowel on either side of the lesion with a primary end to end anastomosis. Since the hernia was partially sliding,

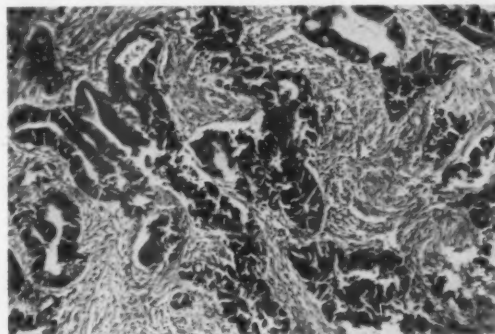


Fig. 4. Microphotograph demonstrating the adenocarcinoma with numerous atypical accini with many mitotic figures in the carcinoma cells.

it was necessary to enlarge the internal hernial ring in order to replace the bowel into the abdomen. The excess sac was trimmed off, the peritoneum closed, and a routine left inguinal herniorrhaphy followed.

The immediate postoperative course was stormy with development of left pneumonitis and temperature elevation to 104°. There was marked lack of cooperation by the patient which prolonged recovery from the pneumonitis. Bowel sounds were heard forty-eight hours after surgery, and a small amount of stool appeared in seventy-two hours.

Following the resolution of the pneumonitis, the rest of the recovery period was uneventful. Clear fluids were begun in seventy-two hours, progressing to low residue diet in six days. The patient was discharged on August 13, 1959.

The pathological report revealed "adenocarcinoma of the sigmoid with lymph node metastasis." The tumor was found to have extended through the serosa.

Primary neoplastic involvement in inguinal and scrotal hernia have apparently been exceedingly rare. A search of the literature reveals only fourteen other cases reported in the last twenty-eight years. This is the fourth case of adenocarcinoma of the colon and the third case recognized preoperatively.

Lezar has classified tumors of the hernial sac as (1) intrasaccular, (2) saccular, (3) extrasaccular. The bulk of tumors reported have been extrasaccular in character. The previously reported neoplastic growths were (1) lipomas, (2) carcinoma of the appendix, (3) fibrosarcoma of the mesentery, (4) fibroma of the mesentery, (5) primary carcinoma of a bladder diverticulum, (6) carcinoma of the sigmoid, (7) lipoblastic sarcoma of the omentum, (8) mesotheliomas, (9) liposarcomas, (10) fibromyxomas and (11) carcinoma of the bladder.

The first case reported in the literature of adenocarcinoma of the sigmoid in a hernial sac was made by Gerhard¹ in 1938. This was a man, thirty-seven years of age, with an inguinal hernia who was admitted complaining of considerable obstipation and moderate pain. Preoperative diagnosis of the tumor was apparently not made. Operation revealed a large adenocarcinoma of the sigmoid which was successfully resected.

In 1940, Zimmerman and Laufman² reported three cases of neoplastic involvement, all were sarcomatous in arising from tissues of the hernial sac. Their cases ranged in age from eleven weeks of age to sixty-seven years. The first case proved to be a primary peritoneal tumor or mesothelioma of the peritoneum. The second case in a sixty-four-year-old man had a history of an inguinal hernia of twenty years' duration. The presenting complaint similar to our case was slight weight loss and intermittent obstipation with probable obstruction with irreducibility of the hernia. Their case proved to be a liposarcoma of very malignant type and the patient died within six months of metastases. The third case, a sixty-year-old man, proved to be a degenerated fibromyxosarcoma. None of these cases was suspected of harboring neoplasm preoperatively.

Fieber and Wolstenholm³ reported in 1955 two cases of neoplasm as a complication of inguinal hernia. The first case was an adenocarcinoma of the sigmoid in an elderly male who had complained of obstipation and cramps of ten days' duration with a progressively enlarging scrotal hernia which had been symptomless for ten years. The mass in the scrotum had been irreducible for three years. A weight loss of 10 pounds had been observed over a period of six months. At operation the lesion was found to have spread to the peritoneal cavity with numerous implants.

The authors believe that irreducibility of the hernia strongly suggests carcinomatous complication, particularly in the older patient. This occurs when (1) the tumor grows larger than the inguinal ring (2) when there is growth of the lesion with fixation to the sac itself (3) when supervening inflammatory process with edema and other products of the inflammation are present.

Bruce⁴ reported a case diagnosed preoperatively in a sixty-six-year-old male with symptoms suggestive

of carcinoma of the colon with blood in the stools, intermittent attacks of diarrhea and constipation with slight weight loss. The hernia had been present for three years and it was non reducible for only a short time. The only physical finding was the large incarcerated hernia. A barium enema examination visualized a lesion "highly suggestive of carcinoma of the sigmoid in the hernial sac."

At operation the tumor was found to be adherent to the sac wall. A Paul-Mikulitz type of operation was done with extensive repair of the hernia. The pathological report revealed a polypoid type of mass approximately 6 centimeters in length with areas of necrosis. Invasion of the fatty tissue was demonstrated although an excised lymph node was negative.

The present case revealed symptoms only mildly suggestive of carcinoma of colon. The blood loss might have been attributed to obviously demonstrated bleeding hemorrhoids. However, the irreducibility of the mass, the anorexia with consequent mild weight loss, and the significant blood changes, properly alerted the clinician to look further for other pathology.

Barium enema examination to be followed where indicated by small bowel studies would appear to be indicated in all cases of hernia especially in older males where herniorrhaphy is contemplated. The barium enema should be done first, so as to obviate causing acute obstruction from the barium given orally. Earlier examinations in these cases would undoubtedly improve the chances of obtaining subserosal lesions which have not metastasized.

In summary, a case of long standing irreducible hernia in an older man with blood changes suggesting significant blood loss was found to be harboring a clinically unsuspected carcinoma of the colon which was successfully resected.

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The Future of Exfoliative Cytology in the Radiotherapy of Cancer

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THE RADIOCURABILITY of a cancer is only partially dependent upon its gross features (location, size, and structures involved) and the skill of the radiotherapist. Other significant factors are the radiosensitivity and metastasizing capabilities of the neoplasm, and the reaction of its host tissue. It is these latter factors which are more difficult to determine.

Recent reports have indicated various applications of cytologic techniques to radiotherapy.¹⁻⁴ The purpose of this communication is to review some of the progress in this field, and to indicate some possibilities for future applications.

Histologic Type and Degree of Differentiation of the Cancer

Cytologic smears are generally thought of in terms of "positive" or "negative" for malignant cells, although the histologic type can also be determined in a high percentage of positive smears.^{5,6} Despite the high accuracy of cytologic diagnosis, there should be histologic verification of a suspected cancer whenever possible. The surgical biopsy should not be abandoned in favor of smear diagnosis. Nevertheless, the latter can provide valuable supplementary information before, during, and after radiation treatment.

Pre-irradiation biopsies may be adequate to identify a malignant neoplasm and its microscopic type, but there may be insufficient viable tissue to determine the degree of cell differentiation. This can be accomplished by the examination of smears from the surface of squamous cell carcinomas using the nucleo-cytoplasmic ratio and keratinization as criteria.⁷

Radiosensitivity

The determination of neoplastic cell differentiation is of limited value in measuring radiosensitivity. Although, in general, well differentiated neoplasms are less radiosensitive than are anaplastic ones, there are many exceptions to this rule, and other means of determining radiosensitivity are needed.

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Radiosensitivity may be determined by serial biopsies taken during treatment^{8,9} but this involves careful selection of biopsy sites, discomfort to the patient, and the risk of producing a "locus minoris resistentia" with resultant poor healing. Smears, on the other hand, may be obtained easily and painlessly, and contain benign and malignant cells from various portions of the lesion.

During the early phases of irradiation, neoplastic cells show degenerative changes such as vacuolization and chromatin abnormalities culminating in cell destruction. There is marked cellular and nuclear enlargement, and increase in multinucleated cells or syncytial masses due to arrest or alterations of mitotic activity.¹

There is little correlation between tumor size and rate of disappearance of malignant cells from smears in carcinomas of the oral cavity and oropharynx. Thus, the rate of cytologic conversion appears to be a measure of sensitivity and is evaluated easily by serial smears taken during treatment. Smears become negative within a few days after irradiation is started for lymphoepithelioma which is characteristically radiosensitive, while smears from differentiated squamous cell carcinomas may remain positive for weeks.

Maturation During Irradiation

The two major direct effects of irradiation on malignant cells are destruction and maturation. The relative significance of the latter is not known. Increase in the differentiation of carcinomas has been noted during irradiation.⁸⁻¹¹ Some believe this is true maturation;⁸⁻¹¹ others think that it merely indicates temporary destruction of more immature cells so that the remaining malignant cells appear more mature.¹² According to Glücksmann⁸ neoplasms which decrease slowly in size during irradiation may be responding by maturation rather than destruction, and may be associated with a good ultimate prognosis. Hall and Friedman¹¹ noted this phenomenon more often in under-irradiated neoplasms. Study of irradiated oral cancers by serial oral smears revealed some degree of maturation (measured by increase in nucleocyto-

plasmic ratio and keratinization) in most cases, but was striking in only a few instances.¹⁰ Examination of smears again provides a simple method for this evaluation.

Irradiation Changes in the Host Tissues (Indirect Effect)

There is considerable clinical and experimental evidence to indicate that the beneficial effect of irradiation is, at least in part, due to the response of the host tissue.¹²⁻¹⁵

1. Larger doses of irradiation are required to destroy neoplasms grown *in vitro* than *in vivo*.¹⁴
2. Irradiation has less effect on embryonic tissue which has not yet developed a vascular system than on more mature embryos.¹³
3. Transplantation of neoplasm irradiated *in vivo* is less successful when delayed following irradiation as contrasted with neoplasms which are transferred immediately after irradiation.¹⁶
4. More favorable clinical results have been observed when irradiation produced changes in the stroma of a malignant neoplasm.¹²

The Grahams and associates found that the changes in benign irradiated squamous cells in vaginal smears provided an excellent guide to radiocurability.^{3,4} In their series, the five-year survival of women with cervical cancer was much greater when the majority of the benign cells exhibited vacuolization, enlargement, multinucleation, and nuclear changes during irradiation. They concluded that this radiation response ("R-R") reflected either a mutual radiosensitivity of the benign and malignant tissue or the indirect effect of irradiation.

The Grahams also noted a peculiar type of benign cell in the pre-treatment vaginal smears of women who responded well to x-ray or radium treatment.² This phenomenon, "S-R" sensitization response, was found in 30 per cent of invasive cervical cancers but in only 7 per cent of the *in situ* carcinomas, and is believed to indicate an important host reaction to the cancer. We have found "R-R" but not "S-R" in oral smears of patients receiving x-ray or cobalt irradiation for carcinomas of the oral cavity or oropharynx.

The Grahams are so convinced of the reliability of these cytologic observations that they have recommended surgical treatment instead of radiotherapy when possible for those patients who exhibit poor "R-R" or "S-R." They also suggested that patients who exhibited marked cytologic response were more likely to develop complications of irradiation.² It re-

mains to be determined if poor reactors can be given excessive dosages of irradiation with safety. The possible use of substances which increase radiosensitivity in experimental animals is intriguing.^{16,17}

Prediction of Metastases

Anaplastic neoplasms are more prone to metastasize than are well differentiated cancers, but while this is statistically valid in analyses of large series, it is not reliable in the evaluation of individual patients.

Graham⁴ noted a great difference in the neoplastic cell populations in vaginal smears from cervical carcinomas of similar clinical stages. Cases with abundant exfoliation showed a high incidence of metastases. Preliminary observations in oral cancers have supported this finding.¹⁰ This phenomenon is probably the result of differences in intercellular cohesiveness. Thus, tumors with little cohesiveness may shed cells more readily not only from the surface but also into draining lymphatics and blood vessels. If further observations confirm this association, a patient whose neoplasm exhibits marked exfoliation may be a candidate for "prophylactic" lymph node dissection or irradiation of node-bearing areas.

Criteria of "Cure"

During the late stages of treatment, vaginal and oral smears show a decrease or complete absence of malignant cells. Vaginal smears are usually negative by the end of treatment, but a majority of patients with oral carcinomas still have positive smears. Positive smears at the completion of treatment do not preclude the possibility of radiocurability. The Grahams⁴ found that the five-year survival of a group of women who still had positive smears compared favorably with those whose smears were negative at that time. In irradiated oral carcinomas the smears often became negative several weeks following completion of treatment. Such conversions occurred up to four weeks after treatment, but smears which were positive at that time remained so thereafter.¹⁰

Occasionally, it is difficult to determine clinically whether or not a tumor has been destroyed by irradiation. A residual ulcer or thickening may be residual tumor or merely inflammatory induration. Interpretation of biopsy material may be equivocal. Persistence of malignant cells in post-radiation smears indicates failure to control the primary neoplasm, but negative smears do not rule out this possibility. False negative smears may be due to residual tumor beneath an intact mucosa or beneath a thick crust of necrotic

material, or may be due to poor technique in obtaining the smears.

Smears may also be used for the detection of recurrent neoplasm. Occasionally positive smears will indicate a recurrence before it is suspected clinically.

Summary

Examination of benign and malignant squamous cells in oral or vaginal smears taken prior to, during, and after irradiation provides valuable information relative to:

1. Microscopic grading of neoplasms;
2. Radiosensitivity of neoplasms and host tissue;
3. Radiation induced maturation of squamous cell carcinomas;
4. Persistence or recurrence of cancer.

This modality may be valuable in predicting irradiation failure, hypersensitivity to radiation, predisposition to metastases, or the quality of the reaction of host tissues (indirect irradiation effect).

In the event that the use of radiation sensitizing agents becomes practical, cytologic studies will probably be indispensable in determining the need for such agents and in controlling dosage.

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THYROID NODULES AND MALIGNANCY

(Continued from Page 604)

Filtration and Collimation Reduce Stray Radiation in Urography

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MANY of the hazards of continued exposure to small amounts of radiation have been known for a long time, but only recent popularization of this subject has awakened some radiation users to possible long term dangers to themselves and others. As a result of this awakened interest, many papers on protection during roentgenographic procedures have appeared in the journals.¹⁻⁶ Relatively few, however, have considered the hazards of urologic roentgenography.^{7-9,16} This report demonstrates that two changes, increased filtration and better collimation, can be inexpensively incorporated into any equipment to reduce the amount of stray and primary radiation to urological personnel and to the patient. Simplicity, economy, and results preclude procrastination in making such changes.

A phantom made by filling a 30 x 60 centimeter aquarium with water to a height of 20 centimeters was used to simulate the scattering and absorption conditions obtained with a patient. The data of Table I represents the average value obtained from three Victoreen model 362 pocket ionization chambers (minometers) placed about each of the positions indicated in Figures 1 and 2. Measurements were made under three conditions: (1) unfiltered beam (inherent filtration of 1 mm. of aluminum) and wide open circular port, (2) 1 mm. of aluminum added filter and a rectangular lead aperture which restricted the beam to the area of a 14 x 17 inch film placed 40 inches from the target, (3) 2 mm. of aluminum added filter with the rectangular aperture.

Referring to Table I, it may be observed that the data of column 1, positions 3 and 6, appear incompatible. This is explained by the fact that the chambers at position 6 are shielded from the direct radiation by the water of the phantom, while a small portion of the chambers at position 3 are in the direct beam. Positions 2 and 4 are equidistant from the x-ray beam axis, but the values at these positions are different by a factor of 3 to 4. This apparent inconsistency can be explained by the differences in water absorption and in the field shape. It is apparent from the data of positions 1, 2, 4, and 5 that the stray

radiation 18 to 20 inches from the beam axis can be reduced about 40 per cent through the incorporation of these simple changes. At positions such as position 3, which should not be occupied by urological per-

TABLE I. SUMMARY OF DATA

Filter Aperture	None No	1 mm. Al. Yes	2 mm. Al. Yes
Positions	Milliroentgens per 10 Exposures		
1*	7	3	5
2	8	6	7
3	640	58	47
4	30	19	17
5	36	20	20
6	410	270	290

*All positions are level with the table top except position 4 which is 12 inches below the table top level.
Exposure conditions: 74 KV, 200 MA, 0.5 seconds, target film distance 40 inches.

sonnel, the stray radiation is reduced by a factor greater than 10.

When using the circular aperture provided in the tube housing, the area irradiated is $3\frac{1}{2}$ times greater than when a rectangular aperture is employed to limit the beam only to the area of a 14 x 17 inch film. Not only does the rectangular beam reduce the stray radiation, but it also reduces the primary beam integral dose to the patient—an important factor. It should be noted, however, that the decrease in patient integral dose is not in an 1:1 ratio to the $3\frac{1}{2}$ times decrease in area achieved by the rectangular aperture.

For various reasons,* care must be used in interpreting or extending the absolute data presented in Table I. This data is valuable, however, because it demonstrates with reasonable accuracy the relative

*Both minimum detectable deflection and unstable zero setting contribute to the inherent error of each minometer reading resulting in reading errors for the data of positions 5 and 6 which may be as much as 40 per cent of the value. Except where the intensity prohibited it, ten exposures were given in succession in an attempt to reduce these errors. Separate tests indicated that saturation was not a factor for readings less than 50 mr. per exposure. In addition to the errors occurring from variations in chamber position, zero drift and imperfect phantom, separate tests by others indicate that the rapidly decreasing sensitivity of these chambers below 74 KV also introduces errors.^{8,10,11} Yet this data agrees with that of Weens et al.¹⁶

improvement in the amount of stray radiation after two simple changes in equipment.

While theoretically the use of filters to reduce patient dose is a well established procedure, in prac-

dosage and scattered radiation is large.^{6,12} Three millimeters total filtration (obtained by adding 1 to 2 millimeters of aluminum filtration depending upon the equipment) appears to be a good compromise between

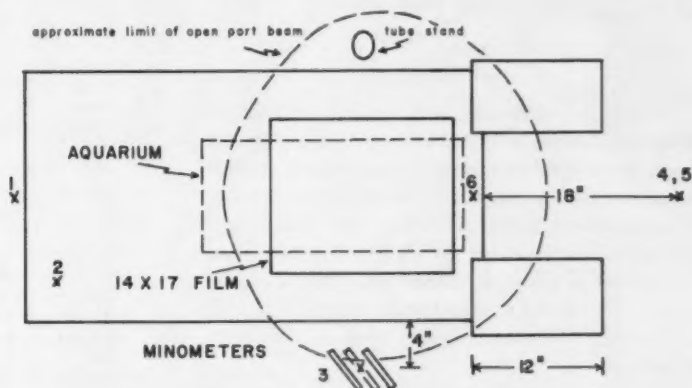


Fig. 1. In this schematic top view of the urology table, the open port beam is unsymmetrical, as indicated, and the collimated beam coincides with the area marked 14 x 17 film. Measurements were made at the positions numbered from 1 to 6 with Victoreen pocket ionization chambers which were distributed about each point as indicated at position 3.

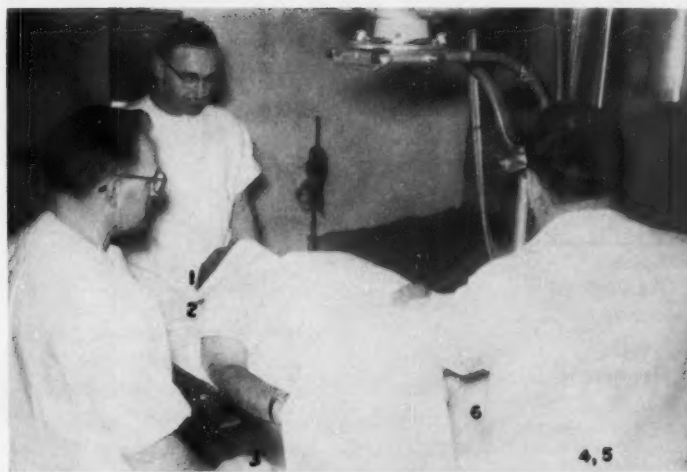


Fig. 2. The approximate location of the measurement positions which are given in Figure 1 are indicated on this photograph of the urologist, anesthetist and x-ray technician.

tice it is too often ignored because it is bothersome to make a change in technique which may be detrimental to film quality. It is well known that film contrast and patient dose decrease with increased filtration; but it has also been shown that up to a half value layer of three millimeters of aluminum, the decrease in contrast is small while the reduction in patient

too little and too much filter, is in good agreement with state regulations¹³ and national codes,¹⁴ and appears to be wise relative to patient and personnel protection.

New or recently purchased equipment does not necessarily conform to these specifications; for example, the cystoscopy equipment of this survey was

STRAY RADIATION IN UROGRAPHY—CARLSON AND HOLLY

purchased in 1957. Since Gorson and Lieberman demonstrated that an excessively high percentage of the equipment in use fails to meet latest specifications,¹⁵ prudence dictates that one should assume that their equipment does not meet these specifications and test it accordingly.

Summary

Utilizing a rectangular lead aperture and added filtration to reduce stray radiation and patient dosage during urographic procedures is not too expensive, too complicated, or too bothersome to be accepted by the urologist and does not materially alter film quality. This report confirms that a considerable reduction in the exposure of all urological personnel and the patient occurs after incorporation of these changes. It is a rare instance when so much may be accomplished by so little.

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Annual Report on Diseases in Michigan

Diphtheria and typhoid fever cases dropped to all-time lows in Michigan in 1959 but whooping cough, hepatitis and scarlet fever increased slightly, the Michigan Department of Health reports.

Only three diphtheria cases were reported in Michigan last year. The all-time high was 12,075 cases in 1921.

Typhoid fever caused only eight cases of illness in 1959, compared with the previous low of twelve cases in 1957 and the all-time high of 5,122 cases in 1900.

For the twelfth straight year, no smallpox cases were reported in Michigan in 1959. The disease hit its all-time high of 7,086 cases in 1902.

Whooping cough cases last year totaled 3,001, compared with the 1958 total of 1,233, which was the all-time low for

Michigan. The all-time high was 16,512 cases in 1941.

Hepatitis cases last year totaled 1,136, compared with 688 in 1958. The all-time high since the disease became reportable in 1945 was 1,419 cases in 1954 and the all-time low was nine cases in 1948.

Scarlet fever was up in 1959 to 9,452 cases, compared with 5,380 in 1958. The all-time high of 24,798 cases was recorded in 1937.

Paralytic polio accounted for 145 cases in 1959, compared with 557 in 1958 and the low since vaccine became available.

Tuberculosis dropped in 1959 to 5,045 cases, the second lowest twelve-month total in the last thirty years. Lowest year in these three decades was 1957 with 5,011 cases. Tuberculosis cases in 1958 totaled 5,658.

Experience with Total Colonoscopy in Fifty Patients

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James A. Ferguson, M.D., F.A.C.S.
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THE VALUE of colotomy and colonoscopy for direct visualization of the colonic mucosa in detecting unsuspected lesions¹ has been adequately proven. It is the purpose of this paper to present some of the experience at this clinic with total colonoscopy performed over a three-year period from 1955 through 1958.

Material

The study represents a review of fifty selected cases in which the following criteria were used:

1. Only those patients in whom the entire colonic mucosa was adequately examined were included.
2. All patients in whom colonoscopy was undertaken in conjunction with resection of a preoperatively diagnosed adenocarcinoma were excluded.
3. Patients in whom there was roentgenographic evidence of multiple polyps were not included.

For the purpose of evaluation, the colon was divided into four areas: cecum and ascending colon, transverse colon, descending colon, and sigmoid colon. All polyps for which the operative procedure was primarily undertaken were termed "target" polyps. Additional polyps found by total colonoscopy were designated "dividend" polyps.

Roentgenographic Findings

Roentgenographic examination of the colon following barium enema was performed on every patient. Confirmatory examination with air contrast study was done at least once in every case. The preoperative roentgenograms revealed a grand total of fifty-nine target polyps. Figure 1 shows the distribution in the four selected divisions of the colon. Two or three polyps occurred as a cluster in several individuals. In no instance was a lesion identified in the cecum or ascending colon on x-ray examination.

Surgical Technique

The technique¹ of total colonoscopy has been described elsewhere. A sterile sigmoidoscope was

passed as far as possible in both directions through as many openings in the colon as necessary. Care was taken to insure that the limit of examination achieved in one direction was overlapped from the opposite

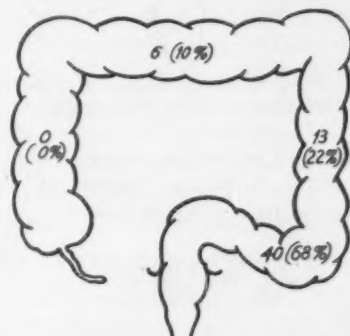


Fig. 1. Anatomical distribution of target polyps diagnosed radiographically.

direction. The entire colon (excluding the rectum) was examined and the removal of all polyps accomplished in sixteen patients through two openings in the bowel. In thirty patients, three colotomies were required. Four enterotomies in four patients were necessary.

Large polyps were removed through colotomy adjacent or opposite the polyp. Small polyps were excised through the sigmoidoscope with sharp forceps or snare and the bases fulgurated.

Surgical Findings

Dividend polyps were discovered in twenty-nine patients or in 58 per cent of the series. The number of these polyps varied from one to fourteen per patient, and on the average one to three were present. Ninety-two unsuspected polyps were removed. Dividend polyps exceeded the total of target polyps almost two to one. Distribution of the dividend lesions in the four divisions of the colon is shown in Figure 2. The anatomical location varied little from that of the target polyps. The majority of both occurred in the left colon. The eleven adenomas in the cecum and

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ascending colon were found in five patients with co-existing polyps in the transverse and left colon. No lesions occurred only in the right colon.

Six segmental resections were performed for either

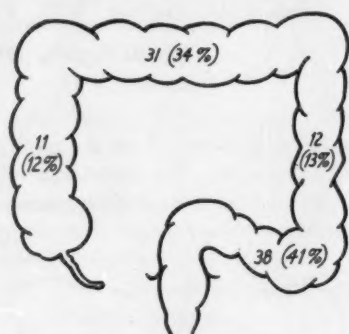


Fig. 2. Anatomical distribution of dividend polyps found by total colonoscopy.

villous adenomas or multiple polyps confined to one segment of colonic mucosa. Location of all polyps excised per patient is shown in Table I.

TABLE I. DISTRIBUTION OF ALL POLYPS FOUND ON TOTAL COLONOSCOPY PER PATIENT

Location	Patient	Per Cent
Left colon only	30	60
Left and transverse colon combined	11	22
Left, transverse and ascending colon combined	5	10
Transverse colon only	4	8
Ascending colon only	0	0

Pathological Findings

The pathological findings are summarized in Table II. Eleven per cent of the lesions showed carcinoma in various stages. Two of the dividend polyps contained carcinoma and would have been overlooked in the absence of total colonoscopy. Size of the polyps varied from 0.2 cm. to 4.5 cm. in greatest diameter. The smallest target adenoma was 0.6 cm. in diameter. The largest dividend polyp measured 1.5 cm. and was located in the descending colon just below the splenic flexure. Forty-five per cent of all the lesions were greater than 1.0 cm. in diameter. The two infected adenomas occurred in two six-year-old boys.

Complications

The complications are listed in Table III and are self-explanatory. The one case of intestinal obstruction required surgical intervention. This patient had many adhesions from previous abdominal surgery. Indwelling catheter drainage of the urinary bladder was used in all but two patients, and acute cystitis occurred in four. There were no deaths. The aver-

age hospital stay was thirteen days including pre-operative preparations.

Discussion

Roentgenographic examination of the colon using barium and air contrast studies has obvious limitations in diagnostic completeness when polyps are present. Polyps in the cecum and ascending colon are extremely difficult to demonstrate. Palpation through the intact colon is not a reliable method of detecting unsuspected lesions. In this selected series

TABLE II. PATHOLOGICAL FINDINGS

Pathology	Number	Per Cent
Adenoma	134	
Infected pedunculated adenoma	2	89
Carcinoma <i>in situ</i> in a diffuse papillary adenoma	3	
Carcinoma <i>in situ</i> in a pedunculated adenoma	6	
Adenocarcinoma in a pedunculated adenoma	7	
Adenocarcinoma in a pedunculated adenoma with invasion of the stalk	1	11

additional (dividend) polyps were discovered in 58 per cent of the patients. In 60 per cent of the patients all of the polyps found were in the left colon only (Table I). Eleven per cent of the lesions showed some degree of malignancy, and in no instance was there a preoperative diagnosis of carcinoma. These figures do not justify anything less than total colonoscopy at the time of transcolonic polypectomy.

The procedure of multiple colotomy and total colonoscopy is the most positive method of examining the colonic mucosa. In the well-prepared bowel, adequate visualization and polypectomy can be accomplished with little difficulty and minimum morbidity. Local excision of adenomas is usually possible. Seg-

TABLE III. COMPLICATIONS (50 PATIENTS AND SIX SEGMENTAL RESECTIONS)

Deaths	0
Intestinal obstruction (mechanical)	1
Ileus	4
Cystitis	4
Atelectasis	1
Peritonitis	5
Thrombophlebitis	1
Other	0

mental resection should be carried out whenever indicated by the size or character of the lesion. Multiple polyps (not multiple polyposis) were treated conservatively using local excision and, in three patients, segmental resection. To date, none of the three-year follow-ups has developed adenocarcinoma or recurrent adenomas.

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Some Biological Considerations in Chronic Disease

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A HIGH DEGREE of control has now been attained for most of those relatively acute diseases which are initiated primarily by single exogenous agents. This leaves as the major problem for future medical research the analysis, control and prevention of diseases commonly designated as chronic or constitutional.

In such diseases the biological background of the individual, which is roughly definable as the genetic influence, is bound to be a factor of unquestioned importance. Such influences are the major factor in determining the degree and type of host resistance to these diseases.

It is important to recognize that, in the vast majority of cases, the genetic influence is not a simple and easily definable factor. It is complex and is affected by the developmental history of the individual. It is, therefore, difficult of accurate recognition, measurement and analysis. In spite of the difficulties, however, future research will demand that we obtain much more knowledge than now exists before the conquest of these diseases can be expected.

There are many methods of research which are available to us at present. The consideration of some of these, with a recognition of their limits and possibilities, is desirable.

Epidemiological studies involving statistical methods are, perhaps, the most popular and most readily available type of analysis now being practiced. Among these, consideration of the actual death rate per 100,000 at any particular time is often used. Death rates are commonly divided by sex, race and age. Consideration of them over a series of successive decades gives rough indications of increase or decrease in the absolute death rates. Many factors, however, serve to complicate such data and require that their use be limited to providing suggestive and stimulating leads rather than for final or conclusive analysis and interpretation.

Some of the variables which cannot be controlled at the present time are changes in specific causal

agents, accuracy of diagnosis, effectiveness of therapy, accuracy and completeness of records, and changes in the genetic susceptibility of individuals comprising the population.

Three other statistical methods of tabulating data on death rates are interesting and of some value:

1. The establishment of the rates of increase or decrease in death rates in successive older age groups.
2. The employment of cohort analysis, which follows throughout its life span a population born at a certain date or within a certain period.
3. In the case of cancer, the relative percentage of total cancer deaths attributed to cancer of specified sites and types at successive age periods.

Each of these methods has value, but none of them has total competency. Statistical data may, therefore, be advantageously used provided the investigator realizes that the observations on which these data are based are, at present, relatively indirect and must be clearly separated from direct experimental or clinical methods.

The incompleteness of our present knowledge concerning the origin of chronic or constitutional diseases is striking. There is no short cut to solving this problem.

Man is quite willing to submit for examination and testing the machines which he uses in his daily life. By so doing, he increases his chance of preventing mechanical disorders and of recognizing those which may appear at their earliest stages. He does not do this habitually for his own body or mind. He still resents efforts to invade the privacy of his physiology or psychology as interference with his liberty and

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independence, and, by so doing, he increases the probability that incipient disorders in either of them may escape observation until they become critical.

The medical profession is completely occupied and, in fact, is overburdened with caring for such crises. It is not to be expected or asked that it add this new and difficult problem of organizing and maintaining studies of normal human beings to its already full schedule.

The situation is closely parallel to the overburdening of registered nurses by demands for critical, hospital care, and the resulting development of practical nurses or nurses' aides to handle the less critical phases of the problem.

What is needed today is the training and employment of great numbers of biologists and biochemists who will devote their research efforts to studies of human biology on essentially "normal" human beings. These scientists should be completely sympathetic to medicine and medical research and should, in turn, be welcomed by those in the medical fields.

Because captive populations of humans, in which longitudinal studies may be made throughout the life span or major fractions thereof, are essential to this research, surveys of the existence of these populations and of the possibilities for their utilization should be made without delay.

Among these populations may be listed the human twins, both identical and non-identical, which exist in the United States and which are being studied for various purposes at scattered institutions. The correlation and co-ordination of such scattered studies should be accomplished as rapidly as possible in order to facilitate the exchange of information, and to insure the maximum use scientifically of this somewhat rare and extremely interesting material.

A recent discovery by Dr. Charity Waymouth at the Jackson Laboratory has also opened up a whole new field of experimental study and of potential analysis of human tissue. This discovery is the development of a completely synthetic medium for growing cells outside of the body. The controllability of experimental conditions is thereby tremendously increased. This, in turn, means that the relative values and functions of different chemical components in cells and tissues may now be accessible to observation to an infinitely greater degree than ever before.

In considering future research on the chronic and constitutional diseases, the values and limitations of two other fields of activity should be mentioned. The first of these, animal experimentation, has distinct value. Its order of applicability is, however, closely similar to that of statistics. The transfer of results from animals to man is a matter of great delicacy and requires extreme caution. There are on record many cases where transfer of results has been justified and has led to great advances in clinical medicine. There have been other cases in which the reaction of animals and of man are quite distinct from one another. Between the two extremes there are various shades and levels of resemblance. Each animal result must be defined and considered specifically in relation to the material and experimental conditions under which it is obtained.

A second important field is that of tissue pathology. This discipline has provided important information on the nature of disease over many decades. There is sometimes a tendency, however, to use the prepared and fixed material as observed under the microscope in predicting or explaining what may have happened within the individual before death and the availability of the tissue for study. This is not a direct observational activity and must be evaluated in somewhat the same way that the indirect evidence of statistics and of animal experimentation are considered.

To sum up, we are on the threshold of a tremendous development in the relationship between clinical medicine and human biology. The sympathy and moral support given by the medical profession to efforts to establish and maintain sources of research on human beings before disease reaches critical dimensions are factors of tremendous importance. With such sympathy and support we may expect the most rapid and effective development of this new era in science. Without them, there will be delay, inefficiency and possible failure.

This is why, no matter how busy the clinician or medical researcher may be, the acceptance and activation of the new development must be encouraged by him.

The partnership, which has been mentioned, is the means to eventual conquest of the greatest killers of mankind.

Diagnosis of Lesions of the Uterine Cervix

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ADEQUATE diagnosis of most lesions of the cervix can be made with simple equipment and a minimum of time. To guard against errors of commission or omission, however, examination must be carried out in some kind of order. The occasional female patient still escapes having a pelvic examination as part of a general physical check-up, but this is probably not as frequent since the advent of the Papanicolaou or cervical spread which so many patients who see doctors now ask for. Our chief trouble now seems to be the patient who through modesty or inertia has never seen a doctor nor asked for anything.

As a matter of fact, obtaining the cervical spread is in these days the first order of business in doing pelvic examination. As you know, the speculum is inserted with minimal or no lubrication before any trauma of the cervix. A further advantage of this way of doing is that the cervix is inspected which is most important from the standpoint of detecting eversion and many of the smaller polyps which may be missed by palpation alone. Benign looking cervical polyps without associated bleeding or other disease are removed in the office. If the spread proves negative, sometimes to save expense to the patient, they are not sent in for section since the price of pathological examination was advanced locally in Ohio some time ago. This is probably not to be recommended as good practice. Polyps that look difficult to remove or that are associated with any type of abnormal bleeding are removed in the hospital and investigation of the uterine cavity and cervix carried out by curettage and biopsy.

Leukoplakia which, of course, is a relatively rare lesion on the cervix is always biopsied regardless of the cervical spread report. Cervical erosions or eversion of the small size and without symptoms may be allowed to remain, in my opinion, if the spread is negative or, if the patient wishes, office cauterization

is carried out at the second visit which is arranged post menstrually.

However, any erosion which is of any consequence, is producing vaginal discharge and is to be cauterized, should be biopsied regardless of the cytology spread. This is usually done in the hospital. For what help it may be, the cervix is coated with 7 per cent iodine to guide the biopsy sites.

No experience in the colposcope has been obtained, or in other words, it is not used much locally.

Being a detection and not a definite diagnostic method, cervical spreads are obtained on all new patients and on old ones once a year or oftener. Anything less, destroys the detection value of the spread. In other words, making it selective is not overall detection. Since patients obtain these tests now here, there and elsewhere, it is usually wise to inquire of new patients especially, if they have had a recent spread to avoid needless expense. It is also probably wise to find out, if possible, where it was read. Parity is more important than age. Exceptions are made only in the non-parous very young woman. Our cytologist suggests routine aspiration of cervical mucus with a second slide with material obtained by scraping the cervix with a wooden spatula. Only in the post menopausal woman in whom no cervical mucus may be obtained is a spread from the vaginal pool of any value to him and this only occasionally for picking up cells from the endometrial cavity. Detection by these means is 60 to 80 per cent in carcinoma of the corpus and almost 100 per cent in cervical lesions outside already full blown necrotic carcinoma which because

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of degenerated cells may go undetected by this method but, of course, is obvious on physical examination.

Before considering some of the findings turned up by cervical spreads, it seems important to say a word about patient communication with this method of diagnosis. It is my conviction that reports should not be sent directly to patients any more than copies of x-ray reports are made available to them. Frequent extraneous details, such as "Trichomonads seen" serve only to confuse and excite apprehension. Generally the patient is told that if there is anything pertinent about the report from the laboratory she may depend upon you to so inform her and arrange for a repeat spread or whatever is indicated. If the report is negative, no telephoning is done as a rule, but the result becomes a part of her record and she may assume it is negative unless informed.

As intimated above, new problems of a social and psychological nature have cropped up both for the doctor and the patient since the more frequent use of this detection measure. Leading up to these problems are the patients without symptoms or signs, often with a normal looking cervix, who are shedding abnormal cells. Many of these spreads are Type III or the suspicious variety reported locally as mild, moderate, or marked dysplasia, or simply as "abnormal cells." In a group of 536 cases of Type III smears recently reported at the Association meeting by J. Edward Hall of the University of New York, 291 proved to have benign lesions often associated with infection of cervix or vagina. There were thirty-two unsuspected malignant epithelial changes, 75 per cent of which were intraepithelial carcinoma. Whether the cervix looks normal or not, the question of biopsy and/or conization and further definitive treatment comes up. I can never escape the feeling that in this group, without symptoms or signs, the individual patient must often feel she is being sold a bill of goods. However, in a referred practice most of the situations have had the referring physician mixed up in the extensive explanation often required.

In our experience, the chief psychological hazard arises when the biopsy, either punch or cone, does not conform with the cytological findings and a repeat biopsy later on, or further frequent spreads are necessary for adequate follow-up. I guess any of us, if we were patients, would like to get off the hook one way or another on such a question. The patient does not understand that even with a carcinoma *in situ*, she usually has some four or more years for invasive cancer to develop, or she may never develop it. I remember one patient of another doctor whose biopsies

were negative but whose spreads continued to show a marked dysplasia or actual carcinoma *in situ*. She made the remark when she came to see me, "Doctor, I've simply lived for six months from one abnormal smear to another." Having completed her family, hysterectomy was carried out without too much further ado, and the epithelial changes were found high in the cervical canal which, as you know, is a frequent site for carcinoma *in situ*. This for psychological reasons is one of the rare exceptions to confirmation by biopsy.

A second patient who was a clinic patient with marked dysplasia was biopsied so many times during and after her almost constant pregnancies that the services of a psychiatrist were eventually necessary to straighten her out. This might be called more science than common sense.

Cold knife conization is done on some cervixes without external lesion or in which punch biopsies have not demonstrated the lesion. This operation leaves something to be desired. Some time ago when trachelorrhaphies were frequently done, the danger of early bleeding, or of bleeding around the tenth day were well recognized. Most surgeons felt that the cervix should be sewed up with the heaviest catgut available. Now we blithely cut a cone out of the cervix and except for light fulguration leave it alone. Cold knife cones bleed and anybody that hasn't had one hasn't obtained many good cones, or has had phenomenally good luck. If canal sutures are put in, the risks of stenosis are real. External sutures designed to ligate the cervical branches of the uterine vessels may help decrease this complication.

If an invasive carcinoma is encountered, it is frequently cut through. One doesn't obtain a diagnosis of a lump on the breast by cutting through it and therefore it would seem that some day we should have a better method of cervical management. There is an impression not yet supported by any facts that I know of, that invasive cervical carcinoma that has been coned out does not do well when treated by radium and x-ray. When possible to establish a diagnosis without it I think it is better to avoid cold knife conization, but I haven't anything better to suggest when it is necessary.

Another improvement we need is a better and simpler method for predicting and determining the radiosensitivity of a tumor. Obviously this should be done before treatment, if by biopsy, and not after radiation is carried out. Disturbance of the radiated cervix by any cutting operation is to be avoided. Ruth Graham has worked for years on this problem. The

LESIONS OF THE UTERINE CERVIX—FAULKNER

chief objection to her ideas and methods may be that they are very difficult to transmit to another individual. Connected with her concept of S-R or radiation sensitivity are appraisals of histiocytes denoting inflammatory reaction or lack of it, an appraisal of estrogen activity from the relative numbers of cornified cells, and particularly an evaluation of the sensitivity of exfoliated cells. Perhaps it is the latter part of the concept which is difficult for other cytologists to evaluate. The evaluation of R-R or radiation response has likewise been difficult to master.

In our institution, Dr. James Reagan, from the spreads and initial biopsy, has correlated survival rates with cell types and has come up with a slightly different system of grading carcinoma, but one still based on keratinization of the cell. His conclusions briefly are as follows: "On the basis of cellular and histopathological evidence, cancers of the uterine cervix were subdivided into a large cell nonkeratinizing type, a keratinizing cancer, and a small cell malignant tumor.

The small cell cancer was associated with the lowest rate of survival, while the large cell nonkeratinizing carcinoma was characterized by the highest rate of survival. The keratinizing cancer was found to be intermediate."

This system, if it stands the test of time, is easy to follow by those of us who are pathologists by avocation but not cytologists, and contains no mysterious elements.

In conclusion, a review of some cervical lesions and methods of diagnosis has been given in the never ending effort and hope that full blown cancer of the cervix may be eliminated eventually if not yet.

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Offer Narcotic Control Advice

Physicians across the nation often report that they are duped by narcotic addicts who come to their offices and give hardluck stories hoping to obtain a narcotic prescription. The Narcotic Control Section of the Pennsylvania Department of Health has developed excellent advice for the physicians who use narcotics in their practice.

Among the many pointers given are the following:

1. Don't leave prescription pads around—They're handy for forgeries.
2. Don't leave your physician's bag in an unlocked car—Lock it in the trunk or carry it with you.
3. Don't prescribe narcotics on the story that another doctor has been doing it—Check with the physician or the hospital records.
4. Don't leave blank Rx's signed in your office for nurses to fill in—Many such blanks have been stolen and used.
5. Don't give an unused prescription blank to anyone,

without first marking VOID across its face—It may turn up as a forged prescription.

6. Don't fail to give your patient a physical examination before prescribing narcotics—Agreeing with a patient's story is not a diagnosis.

7. Don't write Rx's in the names of patients or relatives to obtain narcotics for your office use—This is a violation of the law.

8. Don't fail to be as careful in the prescribing of narcotics for your patients in a hospital as you would be if they were obtaining Rx's from you in your office—Addiction has been caused by excessive amounts of narcotics received in hospitals.

9. Don't treat any ambulatory cases of addiction. Addicts must be under proper control—Addicts often go to more than one doctor at a time.

10. Don't fail to have a special narcotic tax stamp for each office or location where you practice—Failure may result in a fine.

Pathology and Rudolf Virchow

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THE NINETEENTH century will stand out in the history of the world as the Golden Age of Science. The spirit of progress so long held back by the awful pall of the dark ages, so stifled by tyrannical ecclesiastical authority, so chained to many of the groundless beliefs and half-truths of Galen and his more ancient predecessors, seems to have precipitated itself into this age, into a multitude of rivers of genius—all flowing into a mighty sea of truth and scientific discovery. Darwin, Pasteur, Virchow, Koch, Conheim, Henle, Metchnikoff—these are only a few of the galaxy of stars set in the firmament of science from this age. Today, instead of the theorizing rationalism and arbitrary empiricism so characteristic of the past, there has dawned a new era in science, an era of experimental medicine, an era of the microscope, the test tube and the laboratory, an era of golden triumph.

Darwin revolutionized world thought with his *Origin of Species*. Pasteur established for all time the bacterial etiology of contagious diseases. And Rudolf Virchow, with whom we are presently concerned, created the new science of pathology. In doing so, he became the father of modern medicine. For in the words of William Osler, "The study of pathology within the past half century has done more to emancipate medicine from the routine and thralldom of authority than all the works of Hippocrates to Jenner." In the words of William H. Welch, "Virchow, the chief founder of modern scientific medicine, the highest glory in medicine of Germany and of our age will rank for all mankind and for all time to come as one of the greatest figures in science." We, of the present, know only too well that in order to understand the science and practice of medicine, rational therapeutics and the nature of disease itself, we must have a comprehensive knowledge of pathology and pathological processes. And this means a knowledge of the principles laid down by Rudolf Virchow.

In order to appreciate more fully the character of Virchow and the far-reaching consequences of his

discoveries, it is necessary that we know something of the progress of pathology from the earliest times to the time of Rudolf Virchow. We appreciate the present only in relation to the past.

Orderly Progress

The progress of science is slow but sure. All discoveries are built on previous discoveries. One man builds on the work of another. And all is one continuous chain. There could have been no anatomy without dissection; no physiology without anatomy, and no pathology or therapeutics without physiology. Thus there had to be a Galen before a Vesalius. There had to be a Harvey before a Muller. There had to be a Pasteur before there could be a Koch. Bichat followed Morgagni. And Rudolf Virchow followed Bichat. Those alone are great who tear aside the veil from nature and fearlessly reveal for the use of man its hidden laws.

Disease was at first considered as the attack on the individual by demons or evil spirits—the demon of consumption, the demon of heart complaint, the demons of fever, et cetera. Hence we have the priestly character of the medical profession of those times. The early Greeks held that disease was due to the anger of the gods. Hippocrates and his subsequent hippocratic physicians developed the theory of the humors. Briefly stated this theory holds that the human body is composed of four humors: blood, phlegm, yellow bile and black bile. Health is the result of the harmonious mingling of these four humors, and disease is the result of the improper blending between the humors. For over twenty centuries, incredible as it may seem, the minds of men were swayed by this theory of humoral pathology in one form or another. It took Virchow, in the latter half of the nineteenth century, to dispel forever these fantastic ideas about disease and to substitute in its place the sane and important science of pathology that we know today. Rudolf Virchow's contribution to medicine and to science in general is a distinct creation.

Nations Isolated

At the beginning of the nineteenth century, pathology, and medicine in general, was still in a chaotic state. It did not have the international character it has today. Medicine in one country was one thing, and medicine in another country was another thing. The means of interchange of ideas, and medical journals, were few. In fact, medicine was distinctly national.

France held the leading position. Bichat laid the foundation of general anatomy by his studies of the tissues. He opened the way for the study and classification of morbid changes according to the tissues effected. Morgagni before him, emphasized the point that the purpose of pathological anatomy is not simply the collection of curious and interesting specimens. It is rather the teaching of the seats of disease. His great work, "*The Seats and Causes of Disease Studied Anatomically*" is today considered the first great work on pathology. But neither Morgagni nor Bichat went far enough. Morgagni studied only the microscopical changes; Bichat only substituted the tissues comprising the organs as the seats of morbid changes. For over fifty years no distinct advance was made in pathology in this direction. It fell upon Rudolf Virchow to teach us to go still further back than the tissues. He sought the seats of disease in the cells. He tapped the source. Thus, we have Morgagni placing the seats of disease in the organs; Bichat advancing and placing them in the tissues; and lastly, we have the master, Rudolf Virchow, progressing to the very fundamental and placing them in the cells. Morgagni . . . Bichat . . . Rudolf Virchow. . .

In addition, such men as Bayle, Laennec, Dupuytren, Cruveilhier, Rostan, Bretonneau, Andral, Louis, Magendie, and many others placed French medical science far above the level of any other country. Nevertheless, false and exaggerated ideas about pathological anatomy still existed and led to the establishment of various schools of pathology and unfounded systems of medical doctrine. At the same time, the importance of experimental pathological physiology was not recognized.

The influence of John Hunter, the great investigator in pathology, existed in Great Britain. Rudolf Virchow and John Hunter were alike in many respects. Both men disregarded philosophical speculation and went back to nature and to direct observation. To them facts were the things on which to build doctrines. Both made use of all the allied sciences at their disposal. But what is more important, both

recognized that pathological physiology was the foundation of scientific medicine. Anatomical investigations, clinical observation, experimental physiology—these were to form the basis of pathology. The time was soon to come when Virchow could build the foundations of scientific medicine deeper and stronger and broader.

In the third and fourth decades the great Vienna school of pathology came to the front with Rokitanski and Skoda as leaders. As a purely descriptive pathologist, Rokitanski is today considered the greatest who ever lived. But in the interpretation of morbid changes, he was an unfortunate failure. Still bound in the trammels of humoral pathology, he elaborated the well-known theory of the crases. With the advent of Virchow, it received destructive criticism and caused Rokitanski to repudiate his whole complicated system. The last death blow to humoral pathology had been dealt.

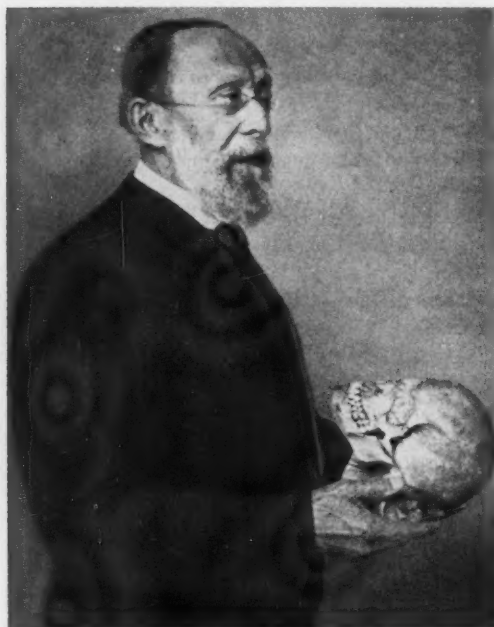
In Germany, there existed primarily a succession of systems and schools of doctrine, all based on speculation. The minds of physicians were occupied with such doctrines as Vitalism, Brownianism, Philosophy of Nature, et cetera. The controversy, centuries old, as to whether disease effects primarily the solids or the fluids was still kept up with unceasing effort. To Virchow, coming like a light into the darkness, only facts and experimentation were to form the admissible foundation of scientific medicine.

Immediately before Virchow began his career, important discoveries in microscopical anatomy were made. Johannes Muller published his work, "*On the Intimate Structure and Forms of Morbid Tumors*," and showed the fruits of the application of the microscope to the study of pathological anatomy. In the same year, following the discovery of the botanist, Schleiden, Schwann promulgated the cell theory. The fundamental error of Schwann, the origin of cells by spontaneous generation out of a primitive blastema, exerted for many years an unfortunate influence upon pathology, and many investigators were led to spend their time and efforts on impossibilities. The blastema theory for a time ruled in pathology. All pathological exudates were resolved into blastemata. The problem of the day was to determine the character of this blastemata, their metamorphosis, and the exact mode of formation of cells out of them. To these delusive problems microscopists set themselves to work. It took Pasteur to dispel forever the theory of spontaneous generation. It took Rudolf Virchow to establish the doctrine on which medical thought today revolves, "*Omne Cellula e Cellula*."

Virchow

This is the stage on which Rudolf Virchow first appeared.

Rudolf Virchow was born in the town of Schievelbein, in further Pomerania, on October 13, 1821. His father was the treasurer of the town and a man of



Rudolf Virchow (1821-1902)

some education. He met with understanding, all the difficulties which rose to oppose the eager humanistic ambitions of the son. Little is known of the childhood and youth of Virchow, except that he learned reading and writing from his father, and that he received private instruction. He entered the third class of the gymnasium at Koslin, May 1, 1835. He early showed an unusual aptitude for the sciences, his favorite studies being the natural sciences, history and geography. But he also studied the ancient classic writings of Cicero, Sallust and Sophocles. To these he devoted his spare hours, at the same time not neglecting to improve himself by reading French and German authors.

At Easter time, 1839, at the age of seventeen years, Virchow passed first among eight students at the examinations. And in the autumn he entered as a student of medicine at the Koniglich Medizinisch-Chirurgische Friedrich Wilhelm's Institute at Berlin.

He went through the regular course, but also found time for research. Some insight into the character of the future master of pathology may be derived from the fact that while studying medicine he heard the lectures on Arabic poetry and also studied Hebrew and Italian.

April 1, 1843, Virchow was appointed "Charite-Chirurgus," which corresponds to assistant physician. He entered immediately into practical work. He felt that he must still learn, and that a thorough scientific education was a necessity. He was not content, therefore, merely to follow on with his comrades. He chose his own course for himself.

On October 21, 1843, the degree of doctor of medicine was conferred on him by Johannes Muller for his work on the inflammation of the cornea.

And now begins a period of manifold activities, a period rich in scientific discovery and investigation, a glory in medicine. Experimenting, elaborating, lecturing in pathology, researching, writing on archaeology and anthropology, upholding the rights of the people in the Prussian Lower House, championing the cause of the oppressed, instituting sanitation in the City of Berlin, Virchow proved himself to be a veritable universal genius, original and independent.

On May 11, 1846, Virchow became an active demonstrator in anatomy. He had now the opportunity of developing his powers in his own way. He was entrusted with the chemical and microscopical investigations necessary for the sick wards. He immediately saw in a combination of chemical with anatomical researches the possibility of attaining an object of capital importance, the creation of a pathologic physiology.

Already in the same year Virchow had read before the Society of Scientific Medicine in Berlin, the paper entitled, "Concerning Points of View in Scientific Medicine." This paper is in a sense the program of the author, a statement of articles of faith, as it were. Here is emphasized the idea that disease is not an independent thing. It is life under changed conditions. Scientific medicine is the investigation of these changed conditions and of the means of removing them. The immediate task is to discard philosophical systems and to set to work in collecting facts. Here is the beginning of the emancipation of pathology and medicine.

Problems

The first problem that occupied Virchow's attention was phlebitis. Phlebitis at that time occupied an important place in pathology. It was believed that he

who could explain phlebitis and the associated phenomena could also explain all the pathological processes. Its importance may be gathered from Cruveilhier's famous sentence. "La Phlébite domine toute la Pathologie." So firmly established at that time was this Cruveilhier's doctrine and also the doctrine that the essence of inflammation is coagulation of the blood in the veins and capillaries, that it seemed only necessary to work out certain details such as whether or not in suppurative phlebitis the pus is secreted by the wall of the vein or by the wall of the arterial capillaries. To Virchow, bringing to his work a clear, unbiased mind, a Baconian attitude and a new mode of investigation, it soon became clear that these general doctrines were based on no sure grounds. Virchow began his investigations. He sought to know the reason for coagulation of the blood and the conditions which make for this coagulation both within and outside the body. The result was a series of fundamental papers on fibrin. Then followed the epoch-making studies on "Thrombosis and Embolism," "Septic Infection," "Arteritis," *et cetera*. These doctrines he elaborated, formed a new chapter in pathology. They stand complete and well rounded out, a monument of brilliant scientific investigation.

Simultaneous with the above investigations, Virchow was led to a study of the morphological elements of the blood. The result was "Leukemia" and the "Pathological Physiology of the Blood," in which he established the "leukemias" as primary diseases of the blood. These researches stand today the same as when he made them.

In 1848, the government sent Virchow to Upper Silesia to study the typhus fever epidemic. His report was considered a masterpiece containing close observations both of medical and social facts. His humanism, fired by the misery and oppression of the people in Silesia led to his early political efforts with which his participation in the Revolution of 1848 resulted in his dismissal from Berlin and his removal to Wurzburg. Here he made investigations of the cellular changes in Bright's disease, parenchymatous inflammation, inflammation of muscle, fungus infections, *et cetera*. Then there are investigations which have to do with "Formation of the Placenta," "Uterine Flexions," "Apoplexy in the Newly Born," "Cretinism," "Chancroids and Papillomata," and so on.

But the brightest lustre of Virchow's scientific work comes from those investigations which laid the foundations of cellular pathology. Already in 1854, Virchow had cast aside definitely the blastema theory of

cell formation. From a host of observations and experiments, he became convinced as to the continuous propagation and proliferation of cells within the individual. He proved that life requires a special formation to manifest itself. It requires certain definite units. These units are the cells and their compounds. Disease is necessarily localized in these cells, being their reaction to the influence of external irritants. The laws working in disease then are not different from those working in health. They are rather subject to different conditions. This is the great biological principle that has stood the test of time.

Practically applied, cellular pathology is the foundation of all morbid processes. The human body is composed of organs. Organs are composed of tissues. Tissues are composed of cells. The cells, then, is the ultimate biological unit. It is the unit of structure and the unit of function. Every cell is more or less independent and has a life of its own. And the functions of the body are dependent upon the sum of the varied activities of the innumerable cell units of which the body is built up. Normally all the units work in physiologic harmony. If the conditions about the cell, the stimuli, physical, and chemical, are within normal limits, all the varying activities including: (1) nutrition, growth, maintenance, repair; (2) reproduction and (3) specialized function, maintain a proper balance. Health is the result. Let there be, however, anything at all which interferes with these functions, and we have a state of disease. And it is the individual cell that is the seat of the morbid processes.

What are the causes of disease?

1. Mechanical:

- (a) Direct injury.
- (b) Exposure to the action of injurious physical agencies—heat, cold, pressure, electricity, x-ray, and other forms of radio-activity.
- (c) Bacteria.

2. Chemical:

- (a) Inorganic poisons.
- (b) Organic poisons.

Any one of these causes working on the cell will produce pathological changes. The result is disease.

What are the morbid changes produced by the above causes?

1. Degenerations and Infiltrations:

- (a) Parenchymatous degeneration.
- (b) Fatty degeneration and infiltration.

- (c) Mucinoid degeneration.
- (d) Waxy degeneration.
- (e) Hyaline degeneration.
- (f) Pigmentary degenerations.
- (g) Calcification.
- 2. Atrophy.
- 3. Necrosis and Gangrene.
- 4. Circulatory disturbances:
 - (a) Hyperemia.
 - (b) Edema.
 - (c) Thrombosis, Embolism and Infection.

The reactions to these causes are:

- 1. Inflammation and Repair:
 - (a) Exudation.
 - (b) Leukocytosis.
 - (c) Phagocytosis.
- 2. Granulomata.
- 3. Tumors.

This is the General Pathology we know today—a broad principle which has become the foundation of Modern Medicine. Thus did Virchow's conception of cellular pathology become an integral part of medical thought. Pathology took its place among the other sciences as next to none in importance.

Brought back to Berlin in 1856 because of his great fame and reputation, Virchow occupied until his death, the chair of Pathological Anatomy and rendered it the most famous of its kind in Europe. At the very start Virchow secured from the Government the concession of a new pathological institute. This was to be constructed according to his own ideas and plans. Here at the Institute he taught hundreds and thousands, and educated the men who were to occupy the chairs of Pathological Anatomy in the other universities. Rudolph Mayer, Rindfleisch, Reeklinghausen, Bezold, Conheim, Klebs, Ponfick, and many others owe him their opportunities and their places. Not only through his own works does Virchow live, but also through the works of his famous pupils.

Cellular Pathology

Virchow's book, *Die Cellularpathologie*, is his most famous accomplishment. Of equal importance, however, are Virchow's three volumes of morbid tumors, *Die Krankhaften Geschwulste*. Here is a work considered by most pathologists today as one which might have filled the life time of a great student and thorough pathologist. Virchow taught that tumors, whether they are parasitic in origin or not are always portions of the body, and do not develop from some morbid humor of the organism, nor independently

through some special force of their own substance. He held that tumors owe their origin as a rule to the less highly specialized tissues, to the connective tissues, and more particularly the epithelial tissues. He gave the first description of hematoma of the dura mater, and of glioma. He was the first to describe leontiasis ossea. He discovered the lymphatic sheaths of the cerebral arteries. He noted that wounds of the cornea repair without the presence of plastic exudations. He maintained that Peyer's patches are only lymphatic glands, and that in disease, they play a part comparable with that of axillary and inguinal glands. He set forth in detail the pathology of syphilis. He investigated tuberculosis, and established the relation to it of lupus. And he explained the forms of parenchymatous inflammation.

In addition, Virchow became the most famous anthropologist and archaeologist of his time, having published several books on both these subjects. In recognition he was made president of the Anthropological and Archaeological Society of Germany, serving many years.

Virchow's universal genius also expressed itself in his political career. At heart he was humanistic. Even in his early political efforts, which necessitated his removal to Wurzburg, he showed his sympathy with the oppressed mass of the people. He himself was born of the people, and he was a friend of the people. Elected city councillor of Berlin in 1859, he served for forty-two years. As a member of the Sanitary Bureau, with its enormous sewage problem, he directed the establishment of immense sewage plants formed after such a plan that they have kept pace in adequateness with the tremendous growth of the city before the World War, at the same time defraying the expenses of their maintenance. Through his efforts Berlin had the reputation of being the most sanitary city in the world.

He was elected to the Prussian Diet in 1862 and served a constant succession of terms as a representative of the people of Berlin. He always sided with the party of progressive tendencies, and, in fact, was one of the founders of the Fortschrittspartei. He was one of the most prominent figures of the German Reichstag from 1880 to 1893. He was one of the most effective antagonists of the encroachments made on the constitution by the conservative party under cover of the royal prerogative. And Bismarck, "that Man of Blood and Iron," found no more persistent and conscientious adversary than Virchow through all his parliamentary career. He contributed to the literature on infectious animal diseases, and on fisheries. He participated in

numerous debates. He introduced the now famous term *Kulturkampf*, battle for culture. He lectured to workmen's societies. He supervised the erection of public hospitals and the first barracks. He conducted the first sanitary train into France during the Franco-Prussian War, and he served as an officer in the army auxiliary societies centered in Berlin.

Thus was Virchow's whole life, a life of multiple activities. From the very beginning of his career to the time of his death he was ever busy with his labors. Be it in pathology, or archaeology, or parasitology, or politics, the sincerity and breadth of view, which was an integral part of him, always made him predominant. He lived to a ripe old age, and he was fortunate enough to enjoy the fruits of his labors, to see the principles which he promulgated gain acceptance, to feel the appreciation of the world. He was showered with honors. On his seventieth birthday and again on his eightieth birthday festivals were held all over the world in honor of this "Grand Old Man of Science." He was awarded the Copley Medal in England. He was made honorary member of numerous scientific societies all over the world. He was per-

sonally awarded a medal by the Emperor of Germany and congratulatory messages kept coming from physicians the world over.

These are little things. It is Virchow's works that are his great monuments. There is the Virchow Pathologic Museum, the most famous of its kind in the world. There is his *Cellular Pathology*. There are Virchow's *Archives*. There remains his work on tumors, embolism, thrombosis, parasites. Most important of all, he laid the foundations of modern scientific medicine. These are heritages he bequeathed to posterity. These are enduring monuments to an enduring name.

On January 1, 1902, Virchow accidentally sustained an intertrochanteric fracture of the neck of the femur. On September 5, 1902, he died of cardiac failure. On Tuesday, September 9, the Berlin municipality accorded him the honor of a public civic funeral. Virchow was buried at the Matthau-Kirchoff Cemetery, in the far west of Berlin.

710 Maccabees Bldg.

Detroit 2, Michigan

Disease Prevention

The program recently announced by the National Tuberculosis Association to wipe out tuberculosis in the United States by locating every person suffering from the disease and treating him with appropriate medication should soon add still another one-time killer to the long list of drug-eliminated ailments.

New medicines have made it possible for the medical profession to not only cut the death rate from tuberculosis, but to hope for its complete eradication as well. Since 1940, new advances in medicine have helped cut the death rate from tuberculosis from 45.9 of every 100,000 Americans to only seven per 100,000 in 1958.

The steep drop in less than twenty years is due primarily

to the development of streptomycin by Dr. Selman Waksman of Rutgers University (backed by a substantial grant from a large pharmaceutical manufacturer).

But tuberculosis is only one of many diseases which have responded in a similar fashion to new medicines. Such once dreaded diseases as typhoid fever, diphtheria, mastoiditis, rheumatic fever, poliomyelitis, the venereal diseases and many others have lost their sting. Pneumonia and influenza take less than half the number of lives they took in 1940. Maternal deaths have dropped from almost forty per 10,000 live births in 1940 to four per 10,000 in 1958.

As these diseases have been defeated by new medicines, others have come to take their place.

The Doctor-Patient Relationship

Lewis L. Robbins, M.D.
Glen Oaks, New York

THE physician, in the course of his regular professional activities, does much that can be rightfully considered psychotherapeutic even though it is not ordinarily so labelled. All patients, regardless of the nature of their presenting complaints, have some anxiety and it is well known that many physical complaints are either substitutes for or concomitants of anxiety.

By attentively listening to the patient tell what is troubling him, by the care with which he inquires into the patient's history and by the thoroughness with which he examines the patient, the doctor strengthens the normal feeling of the patient that he is being competently treated, that he can be helped, and that he no longer has to struggle alone with his discomfort. Thus the patient usually derives support and reassurance from the beginning contact with the doctor even before a specific diagnosis is made and treatment prescribed.

Treatment itself must be preceded by accurate diagnosis which, in psychiatric cases particularly, must go beyond attaching the appropriate label to the illness. It is necessary to have an understanding of what it is the patient is reacting to at the time and in what way he is reacting (the dynamic diagnosis), as well as to understand something of the life history of the patient and its relation to the current problem (genetic diagnosis). A psychiatric diagnosis cannot be made by exclusion alone.

Following such an appraisal of the patient's problem, the physician is in a position to estimate the treatment goals and to ascertain whether or not he is professionally equipped to treat the patient or should refer him to a psychiatrist.



THE AUTHOR
Lewis L. Robbins, M.D.

Many patients derive great benefit from telling their troubles to someone who is willing to listen and will be accepting. "Getting it off one's chest" is a well known means of obtaining relief. In addition, the patient feels less alone, he may be able to achieve greater objectivity about himself, and through the experience of being able to talk, may become more generally spontaneous. The physician, by indicating that other people have similar problems and feelings, further decreases the sense of isolation, shame, and guilt which the patient may feel. Also, through carefully directed questions, the physician may help the patient achieve some understanding of his problems which, in turn, may lead him spontaneously to a solution. At times, the physician may indicate the way with sensible advice and guidance. Patients can often acquire some intellectual insight into the relationship between situations, affect, and symptoms and alter their situations, or their response, or both, in a healthier manner. The solution of surface conflicts can often restore peace of mind, and finding better modes of expression of one's feelings leads to greater ease.

The physician who is not trained in psychiatry should limit his attention to the patient's conscious feelings even though he may be aware of certain unconscious factors in the problem. He should also be aware that patients tend to endow him with attributes that he does not possess and have feelings of affection and anger for him that are unrelated and inappropriate to the doctor-patient relationship. Many patients look upon the doctor as a magical omnipotent father figure on whom they can become dependent and who will solve their problems for them. Flattering though this may be, the doctor must wisely avoid falling into this trap for sooner or later he will be unable to meet the patient's demands, his magic may fail to work, and the affection and cooperation may turn into anger and negativism. Such transference feelings, as they are called, are echoes

From the Hillside Hospital, Glen Oaks, New York.
Presented at the 93rd annual session of the Michigan State Medical Society, Detroit, October 2, 1958.

of early childhood relationships in the life of the patient and are part of the patient's neurotic conflict and therefore need to be recognized as symptomatic of his illness.

It must also be appreciated that, although the patient is unhappy and wants help, another part of him resists giving up his symptoms. The symptom is there for a reason; it has a purpose and satisfies a certain craving of the patient's unconscious. Consequently, any effort to change it meets with opposition. This resistance to getting well may manifest itself in a great variety of ways. It may be hidden in the transference feelings of the patient, it may take the form of a "flight into health," the patient may miss his appointments, refuse to see his role in his difficulties attributing all his troubles to others, and so forth.

When the doctor becomes aware of the patient's resistance, he may become annoyed just as he may have been flattered by the patient's docile obedience. Such countertransference reactions as these (and others) are not only inappropriate but also undesirable. The physician must at all times maintain his objectivity if he is to be truly helpful.

The following suggestions for those wishing to do

psychiatric counseling are taken from "The Human Mind" by Dr. Karl A. Menninger:

First, show the patient that you are interested in him.

Second, don't lie to him, don't give him placebos or joke with him about his symptoms, and don't promise him anything.

Third, listen to what he has to say, listen a long time, and listen many times, alone and without interruption.

Fourth, listen without censoriousness in word or expression, without rebuke, ridicule, or amusement. Absurd as aspects of them may be, your patient's maladjustments are not funny to him.

Fifth, give no advice, no treatment, and no opinion until you know what the patient is really unhappy about; then tell him that such unhappiness *could be* (not *is*) the cause of such symptoms.

Sixth, gradually help the patient to see the connection between his unhappiness and his symptoms and to realize that he must assume the responsibility for such changes in his techniques or his environment as will be likely to give him greater peace. This, rather than allowing him to throw all responsibility on the doctor, is the rational and only permanently successful method of helping him.

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"Immune Milk" No Arthritis Cure

"In spite of all the claims made for it, 'immune milk' is, unfortunately, just the latest of hundreds of misrepresented products offered to cure or relieve rheumatoid arthritis," the national medical director of the Arthritis and Rheumatism Foundation declares.

Ronald W. Lamont-Havers, M.D., said the Foundation, which recently completed a six-month survey showing that \$250,000,000 is spent annually on such misrepresented products, feels it has "an important responsibility" to provide the nation's 11 million arthritis victims with the facts on this product.

Commenting on claims made for the "milk" in recent major magazine articles, Doctor Lamont-Havers explained that "scientifically controlled studies of the product show it has absolutely no effect on the disease."

The "immune milk" developed by Professor William E. Peterson, a University of Minnesota specialist in dairy husbandry, allegedly gets its "immunity" to rheumatoid arthritis

from antibodies produced in the udders of cows injected with streptococcus and staphylococcus vaccines. The victim of the disease, according to the theory, then gets his "immunity" or "cure" by drinking a quart of the "milk" a day. Sold at \$1.10 a quart, it must be taken every day for a "prolonged period to terminate the disease entirely," claim the producers.

Doctor Lamont-Havers pointed out that there is no evidence that streptococci or any other living agent directly causes rheumatoid arthritis, and that treating patients by injecting such vaccines was tried and discarded by physicians more than twenty years ago. Even if these antibodies were beneficial to sufferers, he explained, careful studies have shown that antibodies in milk are infrequently absorbed by humans.

Doctor Lamont-Havers said that while there is no specific cure for rheumatoid arthritis, modern medicine can do much to help its victims. "Meanwhile," he added, "research to find a real cure is going forward on a broad front."

Detroit Physiological Society

Meeting of December 17, 1959

METABOLIC LESIONS IN SALMONELLOSIS

By CHARLES D. JEFFRIES and D. FRANK HOLTMAN
University of Tennessee, Wayne State University

A survey of the data obtained from investigation of the interaction of a host, the chick, and parasite, *Salmonella pullorum*, as well as the action of endotoxin from the parasite was presented. Among the responses which were discussed were alterations in nitrogen metabolism, oxidative metabolism and the effect on the liver lipids.

A disturbance in the amino acid distribution was observed in which the levels of arginine, methionine, glycine and tryptophan were decreased. A single injection of arginine or methionine was effective in prolonging the survival time of infected chicks. The effect of arginine was reported to be due to its involvement in the Krebs-Hensleit cycle and the removal of blood ammonia which was found to increase during the disease. The role of methionine was suggested to be in its function as a methyl donor in the synthesis of creatine and creatinine, the latter having been increased during infection.

It has been shown that citrate accumulates during infection and intoxication. Administration of citrate

or fluoroacetate resulted in a decrease in survival time of infected chicks. The accumulation of citrate during infection may be due to loss of activity of enzymes of the Krebs cycle. It was found that succinoxidase was reduced in activity as was isocitric dehydrogenase, aconitase and fumarase. Cytochrome oxidase activity was decreased but not as much as succinoxidase. Malic dehydrogenase was increased in activity.

The level of coenzyme A was found to be reduced by infection. Endotoxin led to a greater reduction of coenzyme A than observed in infected chicks.

Infrared spectroscopic data has confirmed the disappearance of glycogen from the liver during infection and intoxication. These treatments led to a greater depletion than that resulting from fasting alone.

The saponification value of liver lipids increased to a value well above the normal and then fell below the normal near the time at which the majority of animals died. Administration of arginine, methionine and certain other amino acids and lipotropic agents led to a temporary reduction in the saponification value of the lipids.

The above changes became apparent about the time the parasite began logarithmic growth in the host tissue.

Meeting of January 21, 1960

CYSTIC FIBROSIS SCREENING AND SUDOMOTOR TESTING

By ROBERT M. WEBSTER, M.D., and E. M. KNIGHTS, JR., M.D.
Hurley Hospital, Flint, Michigan

A permanent white handprint on filter paper impregnated with silver chromate gives an instantaneous quantitative method for assaying sweat chloride. Sweat chloride determinations may be used to screen children and adults suspected of having cystic fibrosis and to assess peripheral nerve damage and repair. In cystic fibrosis an excess of sweat formation causes a "heavy" handprint of silver chloride precipitate; control subjects have almost no chloride precipitated. If there is damage to a peripheral nerve the affected area has a zone of decreased or absent sweating, because the sweat glands are innervated by cholinergic sympathetic fibers carried in the peripheral nerves. Other uses of the sweat chloride test are being explored.

EFFECTS OF GROWTH HORMONE ON THE METABOLISM OF NITROGEN FROM INDIVIDUAL AMINO ACIDS

By HELEN LEES and O. H. GAEBLER
Edsel B. Ford Institute for Medical Research

Treatment of hypophysectomized rats with growth hormone increased the incorporation of N^{15} from four labeled amino acids, glycine, L-alanine, L-aspartic acid and L-glutamic acid, into the myofibrillar and sarcoplasmic protein fractions of quadriceps muscle. Growth hormone produced an overall increase in N^{15} labeling of glutamic acid, aspartic acid, alanine, glycine, serine, arginine, and amide nitrogen isolated from the myofibrillar protein. Although the pattern of labeling varied with the amino acid given, the distribution of the isotope was the same in corresponding growth hormone-treated and control groups.

This work has been published in *Archives of Biochemistry and Biophysics*, 84:188, 1959.

Medical and Hospital Costs

The biggest problem the medical profession and the hospital people must face in the immediate future is why total medical costs are continuing to rise. The reaction of the people to this increase in costs and what to do about it demands answers our public will accept.

The fundamental and basic fact from which to start is that the health care of the people, with almost every passing day, is becoming more efficient, more extensive, more all inclusive. New things are being discovered and new services are being perfected both from the standpoint of hospital care, medical and surgical care, and the new drugs and improved appliances used in health care.

Reports presented by Michigan Hospital Service and Michigan Medical Service at the 1960 Annual Session of The Council are very significant.

The Hospital Service report is for the complete year of 1959. The total membership for 1958 was 3,673,924, and for 1959 it was 3,585,282, a loss of 88,642.

Michigan Medical Service enrollment figures are complete to November 30, 1959. They show a grand total of 3,485,218 of whom 1,981,130 had changed over at that date to the M75 certificate. There were 886,888 still carrying the old \$2,500 family income certificate and 617,200 carrying the \$5,000 family income certificate. Efforts are progressing to transfer these two groups.

Reports are that the hospitals are full and it is difficult to get a patient in unless the doctor is fortunate enough to have one whom he can discharge. The frequency and scope of services rendered in the hospitals is constantly increasing and intensive care units are either being adopted or considered quite generally. In our March editorials we outlined several instances of this special care program in Michigan. When we inquired about the expense of these units, we were told that the expense was unquestionably higher to operate these facilities, but that the care of the patients was so infinitely better that there was no comparison.

The very latest figures of costs for hospital services show Michigan Hospital Service during 1958 paid to the hospitals \$118,213,928, while the 1959 figure was \$131,756,260, an increase of 13½ million dollars for 88,642 fewer subscribers. In 1958 there were 553,262 hospitalized cases and in 1959 there were 566,630. There was an increase of 138,587 hospital days. Average charges for hospital service in 1958 were \$29.53, and in 1959 it was \$31.14, an increase of \$1.61 per day.

For medical services in 1958, Michigan Medical Service spent a total of \$49,968,245 while the 1959 costs were \$59,367,000 for the first eleven months only. The average monthly disbursements for services amounted to \$4,947,250 in 1959 as compared to \$4,164,000

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for 1958. In 1959 payments were made for 1,599,246 separate services.

These are vital reasons for the increased costs of hospital and medical service.

Very extensive increase in utilization as well as increase in daily costs must be explained to the questioning groups, and the very public who fear being priced out of the market. Drug costs also have been under investigation by congressional committees trying to find out why the costs of medicines has outstripped the cost of doctors' care as reported by the federal departments.

Divide and Conquer

"An Immediate Challenge" (Excerpts from an address by Louis M. Orr, M.D., President of the American Medical Association, delivered before the Annual County Secretaries Public Relations Seminar, Michigan State Medical Society, Detroit, Saturday, January 30, 1960.)

"I am speaking . . . about the threat to the private practice of medicine—the Forand Bill . . . in fact, I would say that we are facing the gravest, most far-reaching crisis in the history of modern medicine. . . . I am sure that some proponents of the Forand Bill are sincerely interested in the well-being of the nation's elderly population. These persons want to do something for the needy aged. I salute these conscientious men and women.

"On the other hand I fear that some proponents are not primarily concerned with the needs of the aged—health or otherwise. My aim is . . . to issue a strong warning to you.

"This is not a routine rhetorical warning, but rather an urgent call to prevent a medical and a national disaster. The time has come for everyone of us to get out of our offices and laboratories, and do something. If we do not act immediately, we are lost.

"This may sound over-exaggerated to some of you, but I mean it . . . if you sit back and let others do your share of fighting, then you might as well resign yourself to government medicine.

"And please do not think for a moment that passage of the Forand Bill will mean anything less than ultimate government control of medical and health care in the United States. . . . Once congress and the federal government guarantees health care to one age group of our population, they will never let up until they have extended this coverage to all age groups . . .

so now, after a patient wait of some 10 years, the proponents of federal health care are at it again.

"This time, however, they are using a much more insidious tactic than immediate all out government medicine. . . . They are resorting to a gradual, creeping, foot-in-the-door means to push through their desires. . . . It is much harder to fight a cleverly disguised attack such as this. . . . We are faced with an immediate decision: either we win and win by rapid, vigorous action, or we lose—permanently. . . . Once we lose we are through. . . . No matter how often our opponents lose, they can keep coming back. . . .

"Medical care for any part of our population, including the aged, requires an individual approach, based on scientific medical knowledge and experience. Good care also demands flexibility of technique in treating patients—a quality which would vanish the moment the federal government set up a health program calling for standards of treatment.

"I believe most strongly that only by martialing every doctor in America will we be able to successfully battle this dangerous threat.

"Let your enthusiasm . . . help our profession in its all-out war against government seizure and control of American medicine."

Cancer Prevention—Research

A tremendous publicity effort is being carried on pointing toward research work for the discovery of the cause of cancer and the method of prevention or cure of cancer.

For many years, one number of THE JOURNAL each year has been devoted to cancer control. We have been impressed with the public reaction and the professional response to the urge to do something about cancer.

Almost every report of contributions for research at either the University of Michigan or Wayne State University medical schools includes smaller or larger items for cancer study. In the "News Briefs" of this number of THE JOURNAL are one or two references to the same subject and some reports from student work.

The Saturday Evening Post for October 31, 1959, had an eight-page, well-illustrated, well-documented article by Steven M. Spencer, on "New Clues in the Search for Cancer Cures." The sub-head contains the key: "In a massive effort to find an effective weapon against cancer, American scientists are screening 40,000 chemicals a year from every corner of the

world. More than 500 of the soil samples, sent by collectors all over the globe, arrive each week at a research laboratory of Charles Pfizer and Company in Maywood, New Jersey."

The reports from the research being done in our universities here in Michigan also tell of hundreds and thousands of drugs, chemicals, etc., which are being screened looking for information and reaction on cancer.

Just before Christmas, Secretary Fleming of the U. S. Health, Education and Welfare Department announced that traces of certain chemicals had been found in certain cranberry areas, when used in large quantities on cancer study rats, could produce cancer. Recently the pigment in lipsticks became identified as potential cancer causers.

All of this brought to mind an article which was published in THE JOURNAL of the Michigan State Medical Society in June 1948, "A Cancer Cemetery," suggesting a line of research which might produce a cure. Harold S. Hulbert, M.D., of Chicago, suggested and described a "Cancer Cemetery" in which large quantities of fresh cancer material could be buried. Nature's processes would destroy the cancer cells. It might be by worms, bacteria, molds, or by various living or other organisms, digestive process, chemical reactions—there might even be viruses found.

This number of THE JOURNAL is devoted to cancer. The Original Cancer Cemetery paper received very few criticisms as being absolutely fantastic. We are venturing again to call attention of research workers to this line of research which sounds so completely logical, and which is strictly along the line of investigation now being done with the exception of the one feature of establishing a cancer cemetery, where the untreated cancer material is buried over a period of months or years.

In December, 1959, a letter was written to Author Spencer in care of the publishers, and giving him a copy of "The Cancer Cemetery" article. So far nothing has been heard in reply.

The history of penicillin is encouraging. A mold was found which had prevented the growth of bacterial implantation. The hint was there but it took years to develop and give us the wonderful drug we now use so extensively. We urge cancer research workers to read the article by Dr. Hulbert on a "Cancer Cemetery," in the June 1948 number of THE JOURNAL of the Michigan State Medical Society.

This may be purely a dream, but no one will ever know unless somebody carries the work through, and it would not be more detailed or more tedious than

work now being done in so many of our big cancer research laboratories.

Federal Legislation

It is anticipated that Congress will adjourn early this year in order to take part in the election program. Enough important legislative matters may be enacted to give campaign material and some more important ones may be passed over. There are a few legislative programs in which the medical profession is very especially and intensely interested which might be brought up for action.

The most important of these is the Forand bill. This bill itself will probably not be passed, but some small portions of it under a different name may be slipped through, giving special medical or hospital services to a small group of obviously deserving persons. This is the foot-in-the-door program. Once the breach is made, that foot may become an elephant. The medical profession should send letters and make contacts that we wish no type or portion of Forand legislation.

The Forand-type legislation and the new Kennedy Bill, which is so threatening, has one very vociferous group supporting it. The AFL-CIO has set this medical-insurance-type legislation as one of its top demands for 1960. Unions will be pressing for such measures or a piece of it. Senator McNamara of Michigan, who made several reports following his committee study of old age problems, advocates "a substantial increase in social security benefits." He has proposed using the social security setup to pay for medical care and hospitalization for older people.

This is a legislative year and both parties will be looking for voters.

Neither party will neglect old age assistance in one form or another and they both will remember that one-third of the voters expected to go to the polls next November will be more than 60 years of age.

That is a factor the medical profession should also remember.

As a profession we take credit and are happy that the increased life expectancy is producing great numbers of senior citizens. Of those in the voting age, one-third are now over 60 and in another 5 or 10 years, that proportion will have increased still more.

Politicians and candidates who are looking for votes naturally will offer benefits to the over sixty-five or over sixty group.

The medical profession and many prepaid insuring

EDITORIAL

groups now are offering health insurance to this age group without restriction as to age. These programs have been offered as a demonstration that the Forand type legislation is not necessary.

County Medical Society Bulletins

At the Annual 1960 MSMS County Secretaries-Public Relations Conference, a meeting was held for editors of county medical society bulletins. Such a meeting was held two years before and at this meeting it was decided to repeat this event. A very interesting and instructive program was provided. A number of the bulletins are increasing in size, or changing appearance or format.

In its February number, the *Kent County Medical Society Bulletin* has forty pages of very interesting material. There is a listing of officers; a page devoted to the society program of Tuesday, February 9; a listing of all the special and standing committees; a President's message; the address of the Retiring President; a report of the Board of Directors meetings; a report of the Fifty-Seventh Annual Meeting, January 12, 1960, from which we quote one paragraph:

"Dr. Donald Thorup of Benton Harbor was recognized and made a presentation in appreciation for the twenty years of service on the Board of Directors of Michigan Medical Service contributed by William A. Hyland, M.D. Dr. Hyland responded briefly and was accorded a rising vote of thanks."

There was a timely Kent editorial "Payola in Medicine" by Thomas B. Hill, M.D. There were articles on Civil Defense, Communications, Woman's Auxiliary, the History of Medicine in Western Michigan by William R. Vis, M.D. There was also an article on "What Inflation Means to the Estate Planner," and a section on hospital staff news plus the Kent County Tuberculosis Society schedule and a listing of meetings, lectures and conferences for Butterworth, Blodgett and St. Mary's Hospitals.

Medicina is the new name of the Ingham County Medical Society Bulletin. The January number offers a newly designed cover with a dark band about an inch and a half across the base, a white right margin, and a screened area at the left. There is a rectangular box with the new name in red, and a diamond-shaped box with slightly concaved edges in which various designs or materials may be placed. The diamond area for the January number shows a small and capital letter "A," a reading glass, a pair of scissors, a box of

paste, a pen and ink stand—these symbols to tell the story of a "new format." The diamond area for February pictures a nurse working on a child. The diamond shape is repeated at various places throughout the 24-page bulletin.

The Ingham contents are: editorial, "First Editor of Bulletin Traces 27-Year History of Progress," by T. I. Bauer, M.D.; the 1959 Annual reports of the various committees and activities; a welcome to new members with their pictures; Milton Shaw, M.D., continues his "Through the Years" review of twenty-five years ago, and ten years ago. There was a notice of the death of Henry C. Black, New Amendments to the Constitution, Emergency Call List, a column of interesting items, the Doctor Doings, the 1960 committee appointments, and a listing of the officers.

The February Ingham number contained "Scientific Program Arranged for Spring Clinic, April 7"; "Annual Report of the Medical Director"; and the surgical, medical and obstetric cases by month in St. Lawrence, Edward W. Sparrow Hospital, Mason General Hospital and the grand total for all hospitals. There was also a listing of Post Graduate Courses offered at the University of Michigan; an article about the twenty-six members of the Ingham County Medical Society who are serving the State Medical Society in various capacities; a picture of Milton Shaw receiving a plaque in recognition of his services to the profession and to the community which presentation was made by L. G. Christian, M.D.; continuation of Milton Shaw's "Through the Years," an article about medical assistants, and the emergency call list.

These two bulletins show what can be done and what is being done to help build up the medical profession, its morale and cohesiveness, in the county districts. Several other county medical societies could profit by similar action, as well as offer training opportunity to younger as well as older potentially good writers.

Letters to the Editor

Letters to the Editor have always been welcome. Many of them have been published over the years. In the past, several controversial and critical letters or papers have been submitted. When published, the editor and the publication committee reserve the right to secure and publish an answer, closing that particular discussion in *THE JOURNAL*.

We again invite letters.

AMA Acts on Resolution Urging Scholarship Plan

The American Medical Association has initiated action on the establishment of a scholarship program for medical students with the appointment of a special study committee.

William F. Norwood, Ph.D., chairman of the division of legal and cultural medicine, College of Medical Evangelists, Los Angeles, was named staff director of the committee. Dr. Norwood served 1950 and 1951 as a staff associate in a survey of medical education sponsored by the A.M.A. and the Association of American Medical Colleges.

The AMA House of Delegates in December adopted a resolution that a scholarship fund should be established to aid deserving students to enter the field of medicine and that such a fund be backed by the A.M.A. as a primary sponsor. It acted on the recommendation of the A.M.A. Council on Medical Education and Hospitals which reported it had found sufficient evidence of a real need for a scholarship program.

Philanthropy for Health Up

Total philanthropy for the nation's health rose to more than \$1 billion in 1959, according to the American Association of Fund-Raising Counsel, Inc. Health received an estimated 14 per cent of the total \$7.8 billion philanthropy in 1959.

The Association says \$665 million was given to health causes by private philanthropy for service funds, and an additional \$509 million was contributed for construction of private medical facilities. Approximately \$161 million was spent by agencies working to combat 16 separate diseases which cause over one million deaths annually.

The American Association of Fund-raising Counsel, Inc., is a non-profit organization of 31 firms engaged in organizing, directing, and counseling fund raising activities in the U. S. and Canada.

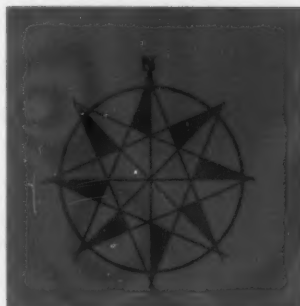
Begin Connecticut Surveys

Connecticut State Medical Society will survey its 3,250 members for their opinions on medical insurance programs. CSMS' House of Delegates also approved a relative value study and a special \$10 per member assessment to finance the two studies.

Grad-Training Programs Show Sharp Increase

Graduate medical training programs for physicians have increased markedly since the end of World War II, according to a report prepared by the AMA Council on Medical Education and Hospitals.

The report attributes the expansion to the desire of young physicians to acquire specialty training after discharge from military service. In 1941, there were 8,182 internships; by 1958-59 there were 12,469. The average number of intern positions for each hospital is 14.6, the highest in the past ten years, stated the report.



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AND WORLD

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"A Lot in Common"

At a recent Indianapolis seminar sponsored by the Indiana State Medical Association to study the Forand threat, Indiana's Governor Handley told the audience that he believes "that the philosophy of many of us, not only here in Indiana, but throughout the width and breadth of the land, certainly jibes with the philosophy of the American Medical Association."

Governor Handley also said, "when we take a look at this federal aid project, this health and federal domination here and there . . . I think we have a lot in common with the medical associations because you learned it the hard way, you've dedicated yourselves, you've given long hours, you want the freedoms and liberties of action which every good American citizen is entitled to."

Survey of Aged

Nationwide study of health needs of persons sixty-five and older by National Opinion Research Center revealed only one person in sixteen of those who said they had been ill and who had not seen an M.D. mentioned lack of money as a reason.

Three Plans Join Blue Shield

Three more nonprofit, medical care plans have been approved as active members of Blue Shield Medical Care Plans. The three plans are Rhode Island Medical Society Physicians Service, headquartered in Providence; Chelan County (Wash.) Medical Service Bureau, located in Wenatchee; and Kitsap County (Wash.) Medical Service Bureau, Bremerton.

The Rhode Island Blue Shield Plan, founded in 1949, is the largest of the newly-approved plans. It has more than 559,000 members enrolled, representing approximately 65 per cent of the state's population.

The three organizations bring to seventy-four the number of Blue Shield Plans and affiliates in the United States and Canada.

Tells Research Accomplishments of Pharmaceutical Industry

Austin Smith, M.D., president of the Pharmaceutical Manufacturers Association, told Senate investigators February 23 that Americans "would be paying a billion dollars a year more for drugs if the price of medicine in the past few years had gone up only as much as the total cost of living.

"On the basis of the record, no other American industry has contributed more from its resources to the public welfare."

Modern drugs have helped to add nearly ten years to the lifespan of the average American within the

past thirty years, he observed, adding: "since 1947 this industry has spent about \$1 billion in research alone.

"Result: the discovery and development of the sulfa drugs, the synthesis and discovery and development of high-potency corticosteroids, the mass production of penicillin, and the discovery and development of the other broad-spectrum antibiotics.

"More than 3,000,000 Americans, living today, would be dead if the nation's death rate had remained constant at its 1937 level.

"Between 1930 and 1958 the death rate for babies under one year was cut 57 per cent—for children one to four years, was reduced 80 per cent—for children five to 14 years, was reduced 71 per cent.

"Only as recently as the years 1930 to 1934, one of every 157 mothers died at childbirth. This number has been slashed to one out of 2,222 in the four years ending in 1958."

Ambulance Mail Trucks

The Post Office and the office of Civil and Defense Mobilization are co-operating in a project to equip the nation's 40,000 mail trucks for speedy conversion to ambulances.

The first phase of the program, to be completed in the next year, will equip 8,000 vanette-type mail trucks. Permanent metal brackets, which will not interfere with the regular use of the truck, will be installed on the inside walls. Litters of non-deteriorating vinyl can be attached to the brackets so as to accommodate up to four patients. A jump seat for the attendant is placed at the rear.

When used as ambulances the trucks will be operated by the regular Post Office drivers while trained personnel to attend victims will be provided by civil defense agencies.

First Aid's 50th Anniversary

The American Red Cross this year marks the 50th anniversary of its nation-wide program of first aid instruction. As it begins its second half-century of teaching first aid, the Red Cross has 85,000 instructors, compared to a director and an assistant in 1910.

The Red Cross teaches first aid across the nation to police, firemen, telephone and other utilities maintenance employes, and in many industrial plants. There are first aid-trained men aboard river and harbor patrol boats and in the membership of the Civil Air Patrol. First aid is a required skill for members of the National Ski Patrol.

MSMS speaks nationally for Michigan Medicine, contributes advice and service to American Medicine.

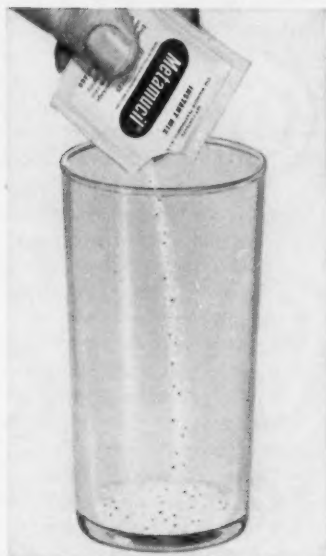
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APRIL, 1960

Say you saw it in the Journal of the Michigan State Medical Society

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Squibb Announces Chemipen

Squibb Alpha-Phenoxyethyl Penicillin Potassium

new chemically improved penicillin
which provides the highest blood
levels that are obtainable with oral
penicillin therapy



As a pioneer and leader in penicillin therapy for more than a decade, Squibb is pleased to make Chemipen, a new chemically improved oral penicillin, available for clinical use.

With Chemipen it becomes possible as well as convenient for the physician to achieve and maintain higher blood levels—with greater speed—than those produced with comparable therapeutic doses of potassium penicillin V. In fact, Chemipen is shown to have a 2:1 superiority in producing peak blood levels over potassium penicillin V.*

Extreme solubility may contribute to the higher blood levels that are so notable with Chemipen.* Equally notable is the remarkable resistance to acid decomposition (Chemipen is stable at 37°C. at pH 2 to pH 3), which in turn makes possible the convenience of oral treatment.

And the economy for your patients will be of particular interest—Chemipen costs no more than comparable penicillin V preparations.

Dosage: Doses of 125 mg. (200,000 u.) or 250 mg. (400,000 u.), t.i.d., depending on the severity of the infection. The usual precautions must be carefully observed with Chemipen, as with all penicillins. Detailed information is available on request from the Professional Service Department.

Supply: Chemipen Tablets of 125 mg. (200,000 u.) and 250 mg. (400,000 u.), bottles of 24 tablets. Chemipen Syrup (cherry-mint flavored, nonalcoholic), 125 mg. per 5 cc., 60 cc. bottles.

*Knudsen, E. T., and Rolinson, G. N.: *Lancet* 2:1105 (Dec.19)1959. QUINOLIN is a TRADE MARK.

SQUIBB



Squibb Quality—the Priceless Ingredients

Gives Opinion on Administration Of Anesthetics by Nurses

Dear Doctor:

You ask my opinion on a set of facts which, if I correctly understand them, may be summarized as follows. You state that for a number of years anesthetics have been administered in your community by nurses on a fee-for-service basis but that that practice has been questioned as illegal because not under the supervision of M.D. anesthesiologists.

Under the governing statutes in Michigan, a registered nurse may not, of course, practice medicine. She may, however, perform any professional service requiring the application of principles of nursing . . . such as and including the execution of treatments and medications as prescribed by a registered physician.

Under the Medical Practice Act, the term "practice of medicine" is defined to mean "the actual diagnosing, curing or relieving in any degree, or professing or attempting to diagnose, treat, cure or relieve any human disease, ailment, defect, or complaint, whether of physical or mental origin, by attendance or by advice, or by prescribing or furnishing any drug, medicine, appliance, manipulation or method, or by any therapeutic agent whatsoever."

Insofar as I have been able to discover, there are no adjudicated cases in Michigan dealing with the subject under discussion. The general subject has, however, formed the basis of an opinion by the Attorney General rendered November 14, 1939. Although the opinion of the Attorney General does not have the same effect and degree of finality as a court adjudication, it does have the effect, until overruled, of binding state agencies and, until and unless overruled, is generally regarded as expressing the law of the state.

Under the opinion above mentioned, it is held that registered nurses may lawfully administer anesthetics only under the direction and supervision of a registered physician. In discussing the problem, the opinion points out that the nurse may not *choose* the type of anesthetic, may not *prescribe* and may not determine when and whether an anesthetic is to be administered. In short, the nurse may act in this capacity only under the direction and supervision of the physician, since otherwise, she would engage in the unlawful practice of medicine.

In attempting to apply these conclusions to your specific inquiry, I am somewhat uncertain as to what significance you attach to the phrase "fee-for-service." It is my opinion, however, that the manner of paying the nurse or the basis upon which she is paid is not in itself important as long as the service which she furnishes is furnished under the direction and direct supervision of a registered physician. If, by "fee-for-service" you mean that she occupies a status independent from that of the physician or surgeon in charge so that he would not be responsible for her supervision and direction, then I would say that she cannot lawfully occupy such a status.

I note that you state that it is contended that the registered nurse may administer an anesthetic only under the supervision of "M.D. Anesthesiologists." If, by this it is meant that the R.N. can ad-



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minister an anesthetic only under the supervision of a doctor who is a specialized anesthesiologist, I cannot agree that the law is that restrictive. Without attempting to express any opinion as to what may or may not be good practice, I believe that it is lawful for the registered nurse to administer an anesthetic under the direction and direct supervision of the licensed physician or surgeon in charge.

To summarize, it is my conclusion that a registered nurse may not lawfully engage in the independent practice of anesthesiology but must, at all times, be under the direction and supervision of a licensed physician who will, of course, be liable for her acts done under his supervision and who must assume full responsibility for diagnosis, choice of anesthetic and the manner of its administration.

Sincerely yours,
LESTER P. DODD
Legal Counsel, MSMS

Use of Mediation Committees

Dear Doctor Wiley, MSMS Secretary:

Sometime ago I received an inquiry arising out of the adoption by the MSMS Liaison Committee with the Michigan Chapter of the Health Insurance Council of the following motion:

"That the Committee recommend to the MSMS Council that MSMS Legal Counsel be consulted as to whether it would be permissible and proper for insurance companies to present matters of importance to the county medical society mediation committees."

At the December meeting of The Council of MSMS, I expressed the view that it was entirely permissible and proper for an insurance company to present a pertinent matter to a county medical society mediation committee inasmuch as the basic purpose of such a committee is to resolve misunderstandings between physician and patient or between the component county society and the public (of which an insurance company is a member). The Council concurred in this view.

Subsequently you have furnished me a copy of a letter dated February 4, 1960 from a county medical society requesting elaboration of this opinion. That letter points out that previous experience has shown that the acceptance of complaints from insurance companies, labor unions and other organizations in behalf of policy holders or members is apt to lead to various complications and, indeed, to defeat the obvious objective of improving physician-patient relationship and the public relations of the medical profession.

I agree wholeheartedly with observations in that county society letter and want to make clear that I

did not intend, by my original opinion, to approve or endorse such practices. The sole question which I considered and upon which I intended to express myself was whether an insurance company which, itself, had a grievance against a physician might avail itself of the mediation procedure. For instance, insurance companies frequently employ physicians to make examinations or perhaps to perform other services. Should a dispute arise between an insurance company and a physician arising out of such relationship, I think it perfectly proper that the mediation machinery of the county society be used to resolve it. I did not intend, however, nor do I believe that The Council intended to suggest that mediation committees should throw open their doors to the mediation of second-hand complaints presented through organizations.

I adhere to my original opinion that an insurance company is a proper party to mediation procedure where it is directly concerned as a party to a dispute with a doctor. I regret that room was left for misunderstanding and I sincerely hope that this will clarify the situation.

Sincerely yours,
LESTER P. DODD
Legal Counsel, MSMS

About Income Tax Deductions

Dear Mr. Burns, MSMS Executive Director:

You recently forwarded to me an inquiry regarding the deductibility, for income tax purposes, of health and accident insurance premiums paid by an individual taxpayer.

In order to keep the matter in proper perspective, it should be kept in mind that health and accident insurance premiums are not, either in whole or in part, automatic deductions from gross income for tax purposes but are deductible only as a part of medical expenses where the total amount of such expenses is sufficient to permit of a deduction under the Code. When the taxpayer and his spouse are under 65 years of age, medical expenses, including health insurance premiums, are ordinarily deductible only to the extent that such expenses exceed 3 per cent of the taxpayer's adjusted gross income. When the taxpayer or his spouse have attained age 65, this 3 per cent limitation, generally speaking, is removed.

Since these provisions have been in the Internal Revenue Code, the Internal Revenue Department has consistently taken the position, and its regulations so provide, that the deductible expenditure for medical care of amounts paid as premiums on health and accident insurance policies is restricted to those portions of the premiums which are attributable to medical coverage. Under the Internal Revenue Department's

(Continued on Page 648)



greater
activity

unsurpassed G.I.
toleration

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peak action

extra-day protection
against relapse

NOW...THE EXTRA BENEFITS OF BROAD-SPECTRUM

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IN THE NEW,
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75 mg./5 cc. tsp., in 2 fl.
oz. bottle—3-6 mg. per lb.
daily in four divided doses

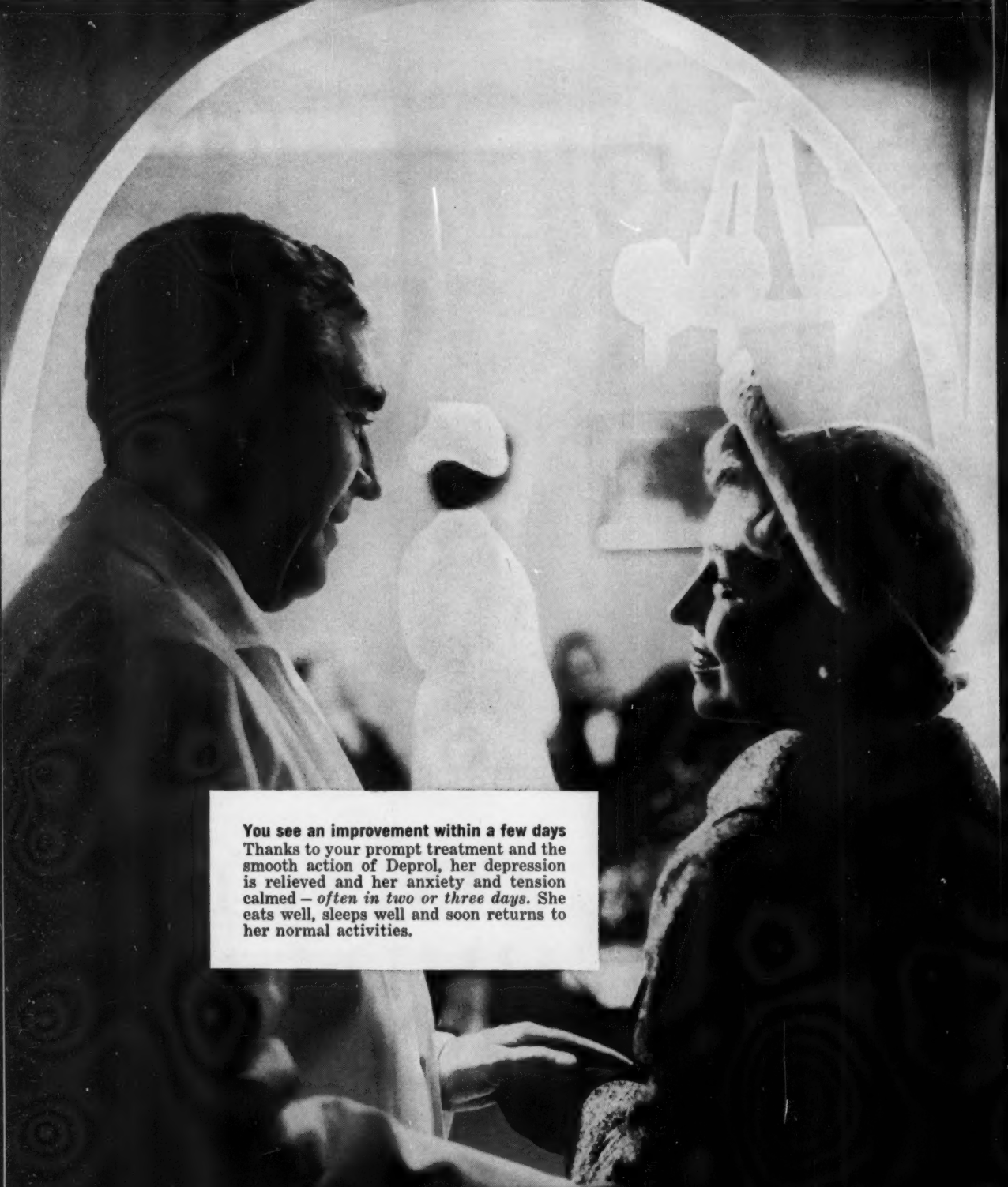
LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

APRIL, 1960

Say you saw it in the Journal of the Michigan State Medical Society

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Lifts depression...



You see an improvement within a few days
Thanks to your prompt treatment and the smooth action of Deprol, her depression is relieved and her anxiety and tension calmed — *often in two or three days*. She eats well, sleeps well and soon returns to her normal activities.

as it calms anxiety!

Smooth, balanced action lifts depression as it calms anxiety... rapidly and safely

Balances the mood – no “seesaw” effect of amphetamine-barbiturates and energizers. While amphetamines and energizers may stimulate the patient – they often aggravate anxiety and tension. And although amphetamine-barbiturate combinations may counteract excessive stimulation – they often deepen depression.

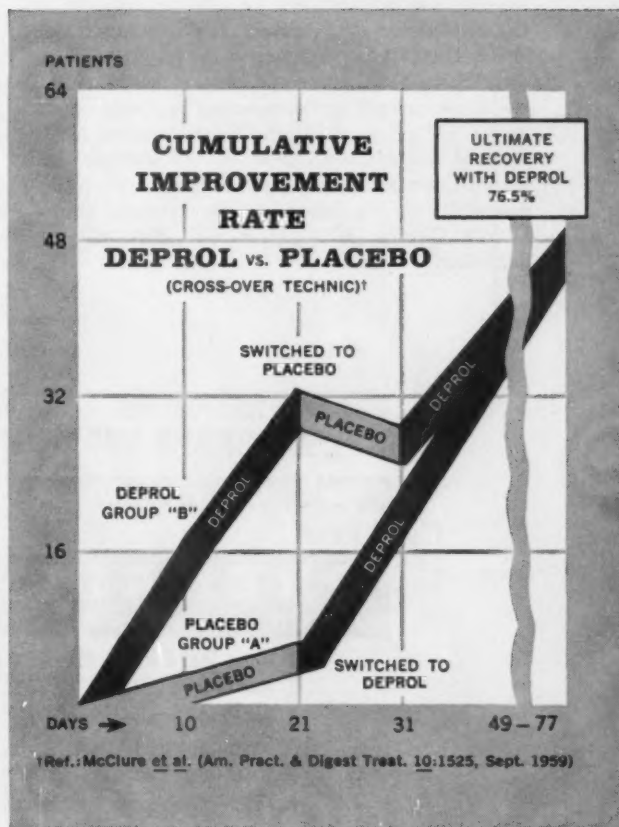
In contrast to such “seesaw” effects, Deprol lifts depression as it calms anxiety – both at the same time.

Acts swiftly – the patient often feels better, sleeps better, within two or three days. Unlike the delayed action of most other antidepressant drugs, which may take two to six weeks to bring results, Deprol relieves the patient quickly – often within two or three days.

Acts safely – no danger of liver damage. Deprol does not produce liver damage, hypotension, psychotic reactions or changes in sexual function – frequently reported with other antidepressant drugs.

BIBLIOGRAPHY (11 clinical studies, 764 patients):

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Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this may be gradually increased up to 3 tablets q.i.d.

Composition: 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.

Supplied: Bottles of 50 light-pink, scored tablets. Write for literature and samples.

Deprol[▲]



LEGAL OPINIONS

About Income Tax Deductions

(Continued from Page 644)

regulations and interpretations, those portions of insurance premiums paid which are attributable to indemnification for loss of life, eyes, limbs or for disability, are not deductible. These rulings have heretofore been consistently upheld by the United States Tax Court.

Recently, the Third Circuit Court of Appeals sitting in Philadelphia disagreed with this interpretation and held that in appropriate cases, the total amount of health and accident premiums is a deductible medical expense.

I understand that the Commissioner of Internal Revenue has indicated that he will not acquiesce in this decision but will continue, except in cases arising in the Third Circuit, to interpret the law as has been done in the past. Sooner or later, of course, if the law is not changed in the meantime by Congress, the matter will get to the United States Supreme Court for final determination. Until then or until our own Circuit Court of Appeals (Sixth Circuit) holds to the contrary, I do not believe the Commissioner or the District Director in Michigan will allow full deductibility.

In view of the unsettled state of the law as above outlined, I do not believe that any organization (at least outside of the Third Circuit) can safely advise its members that such deductions would be allowed. Any taxpayer can, of course, claim such deductions and, if he cares to make a test case of Appeals in our Circuit. I believe, however, that until someone does so, the Internal Revenue Department will continue to disallow such premiums as medical expense, except such portions thereof as are applicable to medical care coverage.

Sincerely yours,
LESTER P. DODD
Legal Counsel, MSMS

About Signed Authorizations

Dear Doctor:

I have your letter of December 18 in which you requested my opinion on a set of facts which you state as follows:

"The hospital in this city has required a written permission from the mother of a newborn boy authorizing the doctor to do a circumcision on her son. If the mother is under 21 years of age, this is

(Continued on Page 650)

... MALNUTRITION OR LEG CRAMPS DURING PREGNANCY? OUTMODED AS GODEY'S FASHIONS!



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Vitamin C	50 mg.
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Vitamin D	400 USP Units
Vitamin B-1	2 mg.
Vitamin B-2	2 mg.
Vitamin B-6	0.8 mg.

Vitamin B-12 (Cobalamin conc. NF)	2 mcg.
Folic Acid	0.25 mg.
Niacinamide	10 mg.
Vitamin K (Menadiene)	0.25 mg.
Rutin	10 mg.
Sodium Molybdate	3 mg.
Fluorine (Calcium Fluoride)	0.25 mg.
Iodine (Potassium Iodide)	0.15 mg.

SAMPLES ON REQUEST

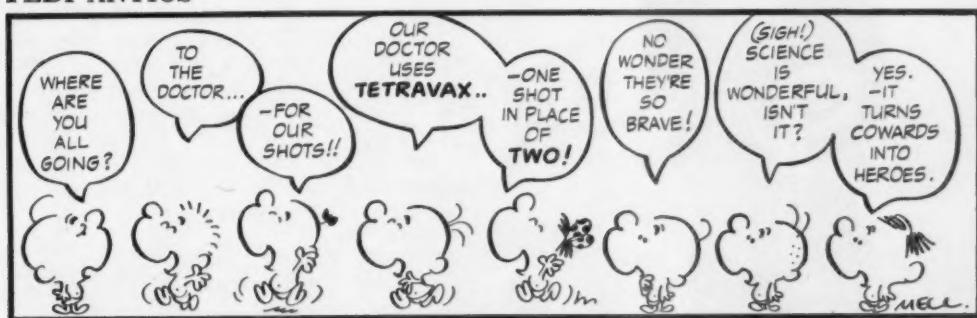
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Schering

About Signed Authorizations

(Continued from Page 648)

turned over to the father for his signature. If he is under 21 years of age, the baby's grandparent is asked to sign the authorization allowing the doctor to perform the circumcision.

"This is quite a complicated and involved procedure at times and I have wondered if it is necessary that we continue such a requirement and whether it is not acceptable to have the baby's parent sign this authorization."

It is my opinion that under the set of facts above outlined, the consent of the baby's parent is sufficient. The mere fact that the parents may be under the age of 21 years does not, in my opinion, invalidate a consent of this type. In fact, I believe it to be safer and preferable practice to have the consent of the person or persons having the care and custody of the child and responsibility for its welfare rather than to rely upon the consent of a third person who does not have that responsibility merely because the third person is over 21 years of age. In expressing this opinion I am assuming, of course, that the consenting parent is not otherwise under disability (such as mental incompetency) and that the child does not have a legal guardian other than the parents.

Sincerely yours,

LESTER P. DODD

Legal Counsel, MSMS

Promote Simplified Claim Forms

The MSMS Liaison Committee with the Michigan Chapter of the Health Insurance Council requests that county societies adopt, use and promote the "Simplified Claim Forms" which were endorsed by the 1955 AMA House of Delegates.

The MSMS Council recommends that county societies adopt the forms for use by the doctors in making claims to insurance firms.

A copy of the "Simplified Claim Forms" booklet was mailed to every MSMS member some months ago. Extra copies may be obtained from MSMS, P. O. Box 539, Lansing.

State Aging Conference Called for September

The Michigan Commission on Aging will hold a "State House Conference on Aging" in Lansing during September.

The state meeting will climax a series of regional conferences, held during March, April, and May. Besides the 11 regional conferences on aging and the state-wide meeting, many counties in the state are planning to hold their own local conferences.

More than 35 state-wide organizations have nominated representatives who have been appointed to the Advisory Committee of the Michigan Commission on Aging. The Michigan State Medical Society is represented by A. H. Hirschfield, M.D., of Detroit.

The Michigan activity is part of a nation-wide effort during 1960-61 to draw attention of the country to issues facing its older people. The Congress, in making funds available for the activity which will lead to the White House Conference on Aging in January, 1961, in Washington, D. C., outlined these major objectives:

"that the Federal Government shall work jointly with the States and their citizens to develop recommendations and plans for action . . . which will serve the purposes of:

"1—Assuring middle-aged and older persons equal opportunity with others to engage in gainful employment which they are capable of performing, thereby gaining for our economy the benefits of their skills, experience and productive capacities; and

"2—Enabling retired persons to enjoy income sufficient for health and for participation in family and community life as self-respecting citizens; and

"3—Providing housing suited to the needs of older persons and at prices they can afford to pay; and

"4—Assisting middle-aged and older persons to make preparation, develop skills and interest, and find social contacts which will make the gift of added years of life a period of reward and satisfaction and avoid unnecessary social costs of premature deterioration and disability; and

"5—Stepping up research designed to relieve old age of its burden of sickness, mental breakdown and social ostracism."

To focus attention on these needs, the theme of the conference will be "Aging with a Future—Every Citizen's Concern."

The Michigan Commission on Aging, appointed by Governor Williams, includes the following: James E. Brophy, Detroit, chairman; Lynn M. Bartlett, Lansing; Dan Connell, Spring Lake; Wilma Donahue, Ann Arbor; Albert E. Heustis, M.D., Lansing; Max Horton, Detroit; John B. Martin, Grand Rapids; Willard J. Maxey, Lansing; Charles Odell, Detroit; Rev. John D. Slowey, Lansing; Charles F. Wagg, Lansing; and Leonard Gernant of Western Michigan University is Executive Secretary. Persons interested in further information concerning the activity may write to the office of the Commission at Western Michigan University, Kalamazoo.



ANCILLARY

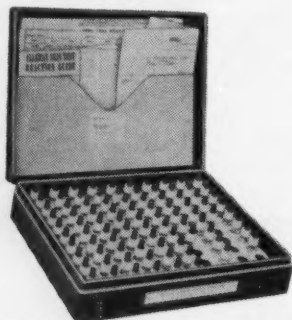
651

H A Y F E V E R . A S T H M A

*How to restore
your patient's
allergic balance
the "classic" way
... use specific
desensitization for*

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ALLERGIC BALANCE is determined by skin testing. Diagnostic Sets \$2 and up. Skin test your patients quickly and safely in your own office.



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Promotes Medical Assistants' Society

(The following clever article appeared in the February number of the Oakland County Medical Society Bulletin, written by Mary Thompson.)

CASE HISTORY

Patient: Oakland County Medical Assistants' Society

Residence: Here and There

Age: Five years

Parents: Michigan State Medical Assistants' Society and American Medical Assistants' Society

Godparents: Oakland County Medical Society

Diagnoses: "Growing Pains." Onset of symptoms about five years ago. Patient began to have difficulty in recognition of existence. Evidence of "stunted growth" due to apathy of godparents.

Family History: Parent Society was founded in 1940, purpose being, to make available to women who are employed by a member of the Oakland County Medical Society, as an assistant, secretary or laboratory technician, a united organization dedicated to higher standards in the medical profession, to promote honest, loyal and efficient service to the doctors, to the profession and to society which they serve.

RX: Recognition and encouragement in our endeavors. Participation in our program and lectures. Encouragement of employees who are not members to visit us, help us with our philanthropic projects.

Prognosis: A more loyal, honest, efficient and grateful staff in your office. A true ambassador to the profession.

NSCCA Prepares Guides

A new step in strengthening development of the rehabilitation movement has been taken by the National Society for Crippled Children and Adults, with publication of two guides to aid in establishing sound administration for the new centers being established to meet the needs of the physically handicapped. The publications stem from an intensive investigation, financed jointly by the National Society and the Office of Vocational Rehabilitation, United States Department of Health, Education and Welfare.

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in Donnalate: Dihydroxyaluminum aminoacetate affords more consistent neutralization than can diet alone. • Phenobarbital improves the possibility of your patient's resting as you told him to. • Belladonna alkaloids reduce GI spasm and gastric secretion. And by decreasing gastric peristalsis, they enable the antacid to remain in the stomach longer.

Each Donnalate tablet equals one Robalate® tablet plus one-half Donnatal® tablet: Dihydroxyaluminum aminoacetate, N. F., 0.5 Gm.; Phenobarbital ($\frac{1}{8}$ gr.), 8.1 mg.; Hyoscyamine sulfate, 0.0519 mg.; Atropine sulfate, 0.0097 mg.; Hyoscine hydrobromide, 0.0033 mg.

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MICHIGAN DEPARTMENT OF HEALTH

ALBERT E. HEUSTIS M.D., State Health Commissioner

Revision of Medical Certificate For Marriage License

The Medical Certificate for Marriage License, Form V-90, has recently been revised. The new form is reproduced on this page. The major change is in providing a space for the physician to list the name

for premarital serologic tests, together with a list of the exact test which each laboratory may perform. The county clerk is responsible for checking the information on each medical certificate presented by applicants against this list.

The new form will be available soon to physicians through their local county clerk.

STATE OF MICHIGAN
MEDICAL CERTIFICATE FOR MARRIAGE LICENSE

City _____ Date _____

This is to Certify That I have this day examined

Name of Applicant _____

Address _____

in accordance with the provisions of Act No. 207, Public Acts of 1937, as amended by Act No. 112, P. A. 1939, and Act No. 230, P. A. 1945, and in my opinion said applicant is free from

syphilis, gonorrhea and chancroid. The following tests _____ (Name of tests)

made at _____ Laboratory* on specimens taken

(Name of laboratory and city where located)

_____, 19_____, are non-reactive.

Signed _____ (Physician)

Address _____

Applicant _____ (to be signed in presence of physician)

*Only laboratories approved by the Michigan Department of Health shall make the test for syphilis and gonorrhea required under this act. Approved serologic tests include: Hinton, Kahn, Kline, Kolmer, Mazzini, VDRL, Treponema Pallidum Complement Fixation and Reiter Protein Complement Fixation.

This certificate is valid for only 30 days beginning on date when physical examination was performed or laboratory specimens taken, whichever was earlier.

See reverse side for Premarital Law.

of the serologic test performed, whereas the old form merely listed the results of the serologic test.

The reason for this change was the State Health Commissioner's declaration of September, 1959, adding additional serologic tests to those already approved as standard serologic tests for premarital and prenatal purposes. This change was explained in the November issue of THE JOURNAL MSMS.

Local county clerks will be provided by the department with a listing of all laboratories approved

EDITOR'S NOTE: Each month, the State Health Commissioner is invited to express his views on health matters and Michigan Department of Health activities.

New Film—"Ready For School"

The Michigan Department of Health has completed a new film entitled, "Ready for School." This 18-minute, sound, color motion picture takes a warm, understanding look at the problem of bringing up a child so that he is ready for school—physically, mentally, and emotionally.

While a good portion of the film deals with the importance of medical and dental care, it is keyed to the concept that a child's world is vivid with experiences and that every experience throughout the first five years of life can be considered a part of preparation for school. Among the subjects touched

MICHIGAN DEPARTMENT OF HEALTH

on in the film are such things as regular bedtime, nutrition, cleanliness, safety, vocabulary development, dental care, pre-school medical and dental examinations, basic skills (tying shoes, dressing) and social responsibility.

"Ready for School" will be of great value for teachers of expectant parent classes, and for use with parents in pre-school conferences, for teacher-preparation institutions, and for all agencies concerned with the health and welfare of children.

The film, which was approved by the Child Welfare Committee of the Michigan State Medical Society, is available for showing without charge to Michigan residents. Requests for bookings should be directed to the Section of Education, Michigan Department of Health, Lansing 4, Michigan.

Census of Public Health Nurses

On January 1, there were 935 full-time nurses employed by all types of agencies for public health work in Michigan. This was an increase of 39 nurses or 4.2 per cent over the last census prepared in 1957. In the meantime, the estimated population of Michigan has increased 5.5 per cent so the already low ratio of public health nurses to population is getting lower. The overall average population served per nurse is one to over 8,500. The distribution of nurses by type of agency is as follows:

COUNT OF PUBLIC HEALTH NURSES

	1957	1960
Health Departments:		
County and District	307	330
City	188	180
Boards of Education	127	147
Other Official	41	36
Non-Official	138	140
Combination	71	76
State	24	26
	896	935

In addition to the full-time nurses, there were 81 part-time nurses employed and 29 full-time licensed practical nurses.

New Films of Medical Interest

The Michigan Department of Health maintains a comprehensive library of health-related films which are available for loan to Michigan residents. No rental charge is made for these films but return postage must be paid by the borrower. Recent additions to the film loan library of interest to physicians are the following:

Hospital Sepsis. 30 min., color. Churchill-Wexler Film Productions.

Shows how a strain of bacteria, foreign to a hospital, spread from the room where a patient with a carbuncle was in bed. Shows bacteria count from bedding, floor, and elsewhere in hospital at each of the seven-day periods of the test.

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MICHIGAN DEPARTMENT OF HEALTH

Shows how hospital practices can spread bacteria from one patient to another. Offers suggestions on changes in methods and routines of housekeeping and patient care which can reduce spread of bacteria.

Cardiovascular Disease. 30 min., b & w. American Heart Association.

This film deals with the problem of caring for stroke patients in their own homes. Detailed attention is given to physical problems of the stroke patient and to physical therapy techniques which can be applied by the patient's family. It also deals frankly with some of the emotional problems confronting the stroke patient and his family. The impact of this film is heightened by its authenticity. It is based on the case history of a 63-year-old fireman who fought and won a hard battle for rehabilitation after he had been paralyzed by a stroke.

Radiation: Physician and Patient. 45 min., color. The American College of Radiology and the U. S. Public Health Service.

This film is essentially about medical radiology—the problems it raises; its biological effects; its physical behavior; and its proper use in clinical examinations. The key message of the film is the *why* and *what* of radiation exposure in diagnostic radiology.

The film emphasizes the need for lower radiation exposure to patients undergoing radiological examinations. For physicians.

Community Health Is Up To You. 18 min., b & w. McGraw-Hill Book Co.

Designed to show the responsibility of the individual citizen for making sure his community's health facilities are adequate and to show the value of the community health council in helping to accomplish this. For senior high, college, or adult groups.

A Study in Maternal Attitudes. 30 min., b & w. New York Fund for Children.

This film is based on the Maternal Attitude Study Project in New York and shows the procedure of a joint interview of seven mothers by the physician and psychiatrist. It demonstrates the techniques which the author, Dr. David Levy, used to get the mothers to discuss their problems. The film is intended primarily for doctors and nurses in pediatric settings including child health conferences and will be used in Maternal and Child Health inservice training programs.

Commissioner's Conference

In February, forty local health officers, representing most of the 43 local health departments in Michigan, met in Lansing for the 10th annual Commissioner's Conference. These conferences were established by the state health commissioner to provide a mechanism for getting advice from the local health officers on how best to improve public health programs in the state. The subjects under consideration at this year's meeting were (1) Screening Procedures, (2) Nursing Homes, (3) Home Care Programs, and (4) Civil Defense.

Following the final session of the three-day conference, the health officers submitted a list of recommendations covering these four areas to the state health commissioner.

U.P. Gets Epilepsy Unit

A permanent epilepsy unit has been established in the Upper Peninsula. This new medical facility, at the Francis Bell Memorial Hospital, Ishpeming, was made possible by funds contributed by the Elks Club of Ishpeming for the purchase of an EEG machine. In the past the Upper Peninsula was served by a mobile EEG Service operated by the Michigan Epilepsy Association. The MEA will continue to help other Michigan communities with mobile service where needed by physicians.

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Cancer Comment

Coordinating the Attack on Cancer in Michigan

"Lives are not saved in the laboratory; lives are saved where people are." This was said by Dr. George Papanicolaou in urging the public and the medical profession to make full use of the tools that have been created for the control of cancer.

To promote the greater use of these tools in Michigan, the American Cancer Society joined the medical profession in this state seven years ago in the formation of a central organization to unify Michigan groups interested in cancer control. The Michigan Cancer Coordinating Committee, created November 12, 1953, united the following six members: the American Cancer Society, Michigan Division; the American Cancer Society, Southeastern Michigan Division; the Michigan Department of Health; the Michigan Health Officers Association; the Michigan Dental Association, and the Michigan State Medical Society.

These organizations, each with unique resources, worked together through the Michigan Cancer Coordinating Committee to win gains over cancer that would be beyond their individual reach. As members of the Committee, the Michigan State Medical Society and the Michigan State Dental Association advanced professional education through the use of films, literature and exhibits produced by the American Cancer Society and with materials and displays of their own. Significant cancer articles were published in their journals, and speakers discussed aspects of cancer at their special conferences and county and state society meetings.

The Michigan Cancer Coordinating Committee joins the state and county medical and dental societies in sponsoring cancer symposia, films, exhibits, refresher courses, fellowships and medical programs on cancer. Many of these programs are subsidized by the American Cancer Society and the Michigan Department of Health.

Statistical studies concerning the prevalence and death rate of cancer are handled by the governmental member of the Michigan Cancer Coordinating Committee, the Michigan Department of Health, in cooperation with the county health departments. These agencies also promote and support some tumor clinics and see that standards of nursing care and social work are maintained.

The Michigan Health Officers Association joins the other professional groups in checking the progress of

the work and suggesting new programs when the need arises.

The Michigan Cancer Coordinating Committee has developed and carried an effective anti-quackery program through exhibits and literature it disseminates. We hope to induce our legislature to pass more stringent regulatory laws against quackery. The Committee also has led a program to revamp and improve the Hospital Cancer Registries as required by the American College of Surgeons. It is apparent that a central cancer registry will be established as a pilot study in Wayne County. This is a cancer control facility long neglected and of great potential.

Thus, the multi-agency approach of the Michigan Cancer Coordinating Committee results in new cancer control services in addition to helping each agency deploy its resources to the greatest advantage in combatting cancer.

The average physician sees about five new cases of cancer a year at most. Yet his ability to recognize possible signs of the disease in those five cases may mean life or death to the individuals involved. That is why one of our major efforts is directed toward helping the physician to increase his knowledge of cancer detection and treatment. The American Cancer Society makes available to every doctor of medicine in the country and to all dentists, nurses, technicians and medical students, information about new developments in the diagnosis and therapy of cancer.

The Michigan Cancer Coordinating Committee is able to draw on the resources of a national cancer fighting organization in helping to bring the latest technique and information on cancer control into the office of every Michigan physician. The American Cancer Society's two bi-monthly scientific journals—"CANCER" and "CA: A Bulletin of Cancer Progress"—unite the cancer control experts of 73 nations in an exchange of knowledge. Michigan dentists and physicians are among the hundreds of thousands of professional people who see the Society's films, slides and exhibits each year. Documentary kinescopes and other medical films are used to demonstrate detection and treatment methods for specific sites. Closed circuit TV is widely used. Nationally recognized cancer authorities also share their insights with Michigan doctors of medicine and dentists through the Cancer Society's many monographs and pamphlets. New developments in cancer diagnosis and therapy were presented last year to more than three thousand Michigan physicians who attended the 100-odd meetings sponsored by the American Cancer Society, the Michigan Cancer Coordinating Committee and county

(Continued on Page 660)

Tetracycline Phosphate Complex (TETREX®) in the Therapy of PNEUMONIA

Preferably, antibiotic therapy should be based on pretreatment culture of the offending pathogen, but in bacterial pneumonia the problem may well be too pressing to permit the required delay of 24 to 48 hours. A differential diagnosis among bacterial pneumonias, based on such clinical grounds as speed of onset, sepsis and pain may guide the choice of antibiotic for initiation of therapy.

Should clinical judgment dictate that antibiotic therapy be started immediately, at the same time a sputum sample or a subglottic swab can be sent to the laboratory for culture and sensitivity studies. If the response to the first antimicrobial agent proves unsatisfactory, a reasonable basis for changing therapy will then be at hand.

Choosing the Antibiotic

Since therapy must be started at once for bacterial pneumonia, it is advisable to choose a broad-spectrum antibiotic that quickly produces high levels of active agent (e.g., tetracycline phosphate complex, TETREX). Such an antibiotic probably has the best chance of controlling the pathogen, whether it be gram-negative or gram-positive. And if the laboratory report shows that the invading organism is much less sensitive to tetracycline than to other agents, the patient can then be changed to an appropriate antibiotic. If the difference in sensitivity is slight, then the possibility of side effects, sensitization, and toxicity should be evaluated before changing therapy to another antibiotic.

The greatest number of bacterial pneumonias are caused by pneumococci, which respond very well to penicillin, tetracycline, and chloramphenicol. Also, these antibiotics are usually effective against the other gram-positive coccil pneumonias. But penicillin is ineffective against the viral pneumonias and the gram-negative *Hemophilus influenzae* and *Klebsiella pneumoniae*. Although *K. pneumoniae* causes only about 1 to 2 per cent of pneumonia cases on the average,¹ these are apt to be acute and fulminating (Friedländer's pneumonia), with a high mortality rate if not effectively treated. Since pneumococcal pneumonia may be difficult to distinguish clinically from Friedländer's, except by gram-stained sputum smear, it may be wiser to start treatment with an agent also effective against *Klebsiella*.

Penicillin, however, in addition to having a limited spectrum, also causes many minor and some serious sensitivity reactions. In a recent survey² it was found that penicillin produced

severe skin reaction. But most important was the observation that anaphylactic shock, with a fatality rate of about 9 per cent, was the most frequent serious reaction. Such severe reactions are almost always associated with parenteral administration.

Tetracycline is also clinically effective in primary atypical pneumonia.³

The tetracyclines (e.g., TETREX) have the advantage of a broad range of antimicrobial activity and low toxicity. And in addition, the physician does not have to trouble himself or his patients with repeated blood studies when he prescribes TETREX. Minor reactions such as gastric upsets or mild skin rashes occur occasionally. The most serious side effects are staphylococcal and monilial overgrowth, but these are rare and can be adequately controlled.

No one would deny that appropriate antibiotic therapy has greatly reduced morbidity and saved many lives of patients with bacterial pneumonia. Nevertheless, general supportive measures in the care of patients remain important even today. Especially in the desperately ill patient, antibiotics are not considered as substitutes for the individual evaluation, clinical observation and judgment of the physician.

Some Micro-organisms Susceptible^a to Tetracycline (TETREX)^b

Streptococcus; *Staphylococcus*; *Pneumococcus*; *Gonococcus*; *Meningococcus*; *C. diphtheriae*; *B. anthracis*; *E. coli*; *Proteus*; *A. aerogenes*; *Ps. aeruginosa*; *K. pneumoniae*; *Shigella*; *Brucella*; *P. tularensis*; *H. influenzae*; *T. pallidum*; *Rickettsiae*; *Viruses of psittacosis and ornithosis*, lymphogranuloma inguinale, primary atypical pneumonia; *E. histolytica*; *D. granulomatosis*.

^a Some strains are not susceptible.

^b Table adapted from Goodman, L. S., and Gilman, A.: *The Pharmaceutical Basis of Therapeutics*, 2nd edition, New York, The Macmillan Co., 1956, pp. 1322-1323.

References: 1. Wood, W. E., Jr.: In: *A Textbook of Medicine*, Edited by Cecil, R. L., and Loeb, R. F., 9th edition, Philadelphia, W. B. Saunders Co., 1955, p. 145. 2. Welch, H.; Lewis, C. H.; Weinstein, H. I., and Boeckman, B. B.: Severe reactions to antibiotics. A nationwide survey. *Antibiotic Med. & Clin. Ther.* 4:800 (Dec.) 1957. 3. Keefer, C. S.: The choice of an anti-infective agent. In: *Drugs of Choice*, 1958-1959, Edited by Walter Modell, St. Louis, The C. V. Mosby Co., 1958, p. 135.

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Coordinating the Attack on Cancer

(Continued from Page 658)

medical societies. Young physicians and dentists from Michigan are among the hundreds who have received specialized training in the field of cancer through the American Cancer Society's Clinical Fellowship Program, in which the Society has invested more than \$4 million during the past 12 years. A program of advanced clinical fellowships was also initiated last year.

Physicians and dentists from the Michigan Cancer Coordinating Committee and its member professional societies in turn help to shape the American Cancer Society's professional and public education programs through their participating as volunteers on the Society's national, division and local committees. These doctors recognize the need to develop and use allied resources outside the profession if the maximum in cancer education and control is to be achieved.

Through their broad public contact, the member agents of the Michigan Cancer Coordinating Committee have been powerful allies able to strengthen the Michigan physician's effectiveness in cancer detection and control. This has been done by helping to bring the physician and a well-informed, receptive patient together ("Lives are saved where people are") which results in a vast public education program carried by all media. One American Cancer Society film, "Time and Two Women," alone has brought thousands of women in Michigan to their doctors for cancer examinations.

The Michigan Cancer Coordinating Committee was created on the premise that effective control over cancer will come from a coordinated effort by all who are interested in the problem. The statistics and the nature of cancer are such that this should include everyone. The agencies of the Michigan Cancer Coordinating Committee seek therefore to synthesize the common interests they represent into a knockout blow at cancer.

Readers of THE JOURNAL of the Michigan State Medical Society are invited to address the Michigan Cancer Coordinating Committee, Box 539, Lansing 3, Michigan, for further information regarding its program and the resources of its member agencies.

HARRY M. NELSON, M.D., Detroit,
Chairman, Michigan Cancer Coordinating Committee

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Obstetrical Brevits

Virus Diseases—Their Effects on Pregnancy Michigan Maternal Mortality Study

Influenza.—From May 17, 1957, to February 4, 1958, 16 pregnant women died in Michigan, all of whom displayed symptoms characteristic of virus pneumonia. Post-mortem examinations of 12 of these patients confirmed the diagnosis of broncho-pneumonia or diffuse pneumonitis. In 1 of these, Virus A Group A, Asian strain, was identified. In 4 others, the examining pathologist stated that influenza was the etiologic factor.

Fifteen of these deaths took place in 1957, 14 between October 3 and November 16, the height of the influenza epidemic. These accounted for 11.2 per cent of the maternal deaths in 1957. The MSMS Maternal Health Committee is concerned about what appears to be a particular susceptibility of pregnant women to influenza.

Poliomyelitis.—From 1955 to 1957 there were no maternal deaths due to poliomyelitis. This is undoubtedly an indication of the effectiveness of the immunization program for young adults and the quite routine practice, in recent years, of vaccinating pregnant women against this disease. The good results obtained by routinely vaccinating pregnant women against poliomyelitis suggests that similar prophylactic vaccination against influenza should be considered.

German Measles.—In 1956 a progressive study of the effects of German measles on pregnancy was undertaken. Questionnaires were prepared and mailed to the chairmen of maternal health committees or to the secretaries of county medical societies. They were requested to announce the project to the membership of their societies and ask that cases in which Rubella complicated pregnancy be reported to them, giving the name of the patient, the month of pregnancy in which the disease occurred, the name of the attending physician, and whether or not the diagnosis of German measles had been confirmed by a physician. This data was to be recorded on the questionnaire and returned to the Michigan Department of Health.

Seventy-seven cases of German measles complicating pregnancy were reported, 56 of which were diagnosed by physicians. The month of pregnancy in which the disease occurred was not mentioned in 6 cases.

One year later the physicians who attended these patients were contacted by letter to determine the outcome of each pregnancy and the condition of the infant. The accompanying tables give the results of the investigation.

Since spontaneous abortion occurred in 6.5 per cent of the cases, a rate lower than the normally expected incidence of 10 per cent, these can be disregarded. Excluding the spontaneous abortions, the incidence of congenital defects was 8.3 per cent. No therapeutic abortions because of this complication were reported.

TABLE I. RUBELLA COMPLICATING PREGNANCY
Michigan, 1956

	Number
Cases reported	77
Cases physician diagnosed	56
Congenital defects found.....	6
Spontaneous abortion	5

Infectious Hepatitis.—There have been 18 maternal deaths that have been attributed to infectious hepatitis since the beginning of the Maternal Mortality Study in 1950. Curiously, 9 occurred during the period 1950 through 1953 and 9 in the period 1954 through 1957.

Of these 18 pregnancies, in only 3 was a living infant obtained. In 10 cases stillborn infants were delivered, in 4 the fetus was undelivered when the mother died, and 1 patient aborted.

TABLE II. INCIDENCE OF CONGENITAL DEFECTS
ACCORDING TO TRIMESTER OF PREGNANCY IN
WHICH RUBELLA OCCURRED
Michigan, 1956

No. of Defects	Trimester	Rubella Confirmed by Physician
5	1	4
1	2	1
0	3	0

Other Virus Diseases.—Other virus diseases complicating pregnancy are believed by some to have deleterious effects on the offspring; for example, cytomegalic inclusion cystic disease, poliomyelitis, mumps, chicken pox. Only by applying similar progressive studies to other virus diseases will a definite answer be found.

It is urged that where there is such a complication during pregnancy, the name of the patient the attending physician, the manner in which the diagnosis was reached and the month of pregnancy in which the complication occurred be reported to Charles A. Behney, M.D., Maternal Health Consultant, Michigan Department of Health, Lansing 4.

Upper Peninsula Meeting Set

The 67th annual scientific meeting of the Upper Peninsula Medical Society will be held June 17-18 at Escanaba, announces William A. LeMire, M.D., president.

This year, the event will be held at the House of Ludington in Escanaba with the Delta-Schoolcraft Medical Society as the host group.

The Woman's Auxiliary to the Upper Peninsula Medical Society also will meet.

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IN MEMORIAM

CHARLES H. CLIFFORD, M.D., fifty-eight, Detroit industrial surgeon, died February 1.

A 1924 graduate of the University of Toronto, Doctor Clifford had practiced medicine in Detroit for thirty-five years. He was on the staffs of Detroit Memorial and Grace hospitals and was a Fellow of the International College of Surgeons.

Doctor Clifford was active in the Detroit Rotary Club, University of Toronto Alumni and the Plum Hollow Golf Club.

ROBERT K. DIXON, M.D., sixty-one, a retired Detroit physician, became ill while vacationing in New Orleans and died there, February 18.

Doctor Dixon, a nationally-known gastroenterologist and former consultant to the Mayo Clinic, practiced medicine in Detroit from 1946 to 1958. He served on the staffs of Mt. Carmel and New Grace, Providence and Beaumont hospitals.

He was a lieutenant colonel in the Air Force during World War II and had served as flight surgeon for United Air Lines.

CHARLES F. DuBOIS, M.D., seventy, practicing Alma physician for forty years, died January 28.

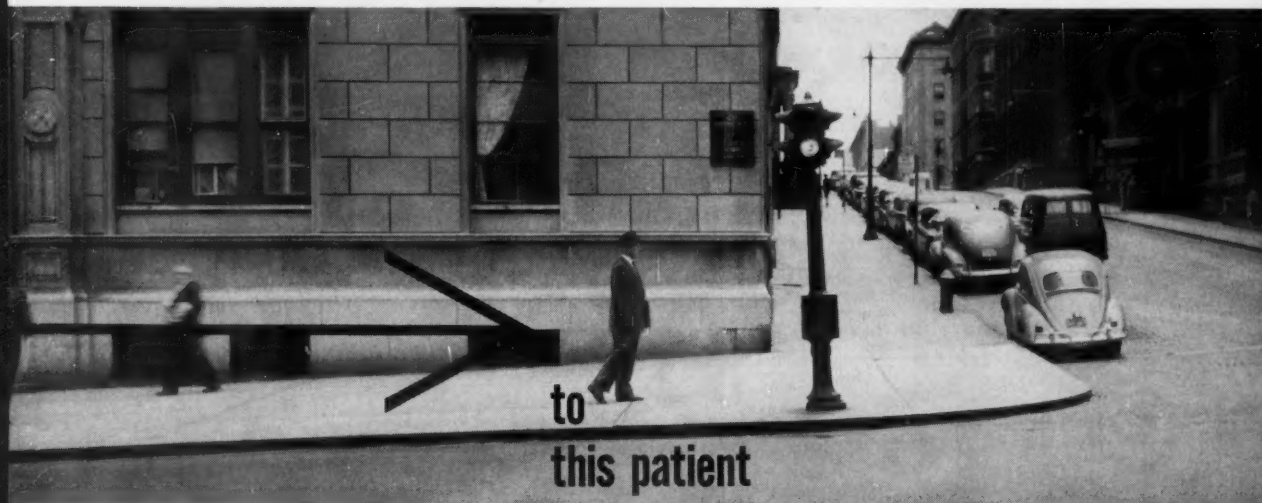
Born in Brainerd, Minnesota, Doctor DuBois attended the University of North Dakota and obtained his M.D. from the Medical University of Chicago, Illinois. He interned in Harper Medical College in Detroit. Doctor DuBois was a veteran of World War I.

For the past 12 years he had served the city of Alma as its health officer, and had held that same post at varying times in excess of 25 years. He served as superintendent of the First Presbyterian church school for many years, and was an elder of that church at the time of his death. He also was a member of the board of trustees for Alma College, was medical consultant for Northwood College, member of the board of directors for the Bank of Alma, had long been on the staff of the former Smith Memorial hospital and was currently a staff member at Gratiot Community hospital. Doctor DuBois had recently received a certificate of merit for his service as an examiner for the Gratiot Draft Board.

Memberships included F & A M Lodge No. 244 of Alma and the Consistory.

JOHN HOOKEY, SR., M.D., sixty, a practicing Detroit area dermatologist, died February 11.

Doctor Hookey, a native of Natrona, Pa., was graduated from the University of Michigan medical school in 1924. He



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IN MEMORIAM

received his dermatology training at the Mayo Clinic in Rochester, Minn.

In addition to many professional and civic affiliations, he was an active member of the Detroit Players.

EVERT W. MEREDITH, M.D., sixty-one, a former Port Huron internist, died February 15.

Doctor Meredith was born in Sisterville, W. Va. He was a graduate of Ohio State University in 1918 and Johns Hopkins University in 1923. Having served his internship and residency in Henry Ford Hospital, Doctor Meredith began his private practice in Port Huron in 1927.

Doctor Meredith was Chief of Staff of Port Huron Hospital from 1946 to 1947 and was a member of the Hospital Board of Trustees from 1946 through 1948. He was on the staff of Mercy Hospital and a life member of Port Huron Hospital.

He was a past president of the St. Clair County Medical Society and a member of the Port Huron Rotary Club.

CALVIN S. PURDY, M.D., eighty-two, Buckley physician for fifty-eight years, died February 19.

Doctor Purdy was born in Ohio and was the youngest student, at twenty-five, ever to graduate from Saginaw Medical College. During the early years of his practice, he traveled long distances on snowshoes to treat lumberjacks and Indians. He was also a widely known authority on American Indian lore and had collaborated to write several books on the subject.

Doctor Purdy practiced in Ludington and Scottville following graduation in 1903 and moved to Wexford county in 1904, where he remained. He owned and operated Purdy's Country drug store.

He estimated that he had assisted in delivery of 5,000 babies in the Wexford area from 1904 to 1958.

ADOLPH T. REHN, M.D., fifty-two, medical superintendent of the Lapeer State Home and Training School, died February 11.

Doctor Rehn, a native of Detroit, attended Northeastern High School there and was a 1934 graduate of Wayne State University College of Medicine. He interned at Receiving Hospital in Detroit.

Doctor Rehn was superintendent of the Lapeer State Home for thirteen years, after serving five years as assistant. He had previously been senior physician at the Newberry State Hospital.

KARL F. SEARLES, M.D., fifty, a Flint general practitioner since 1946, died February 21, 1960.

Doctor Searles was born in St. Johnsbury, Vt., and received his bachelor of science degree in 1931 and his medical degree in 1934, both from the University of Vermont.

After completing his internship in 1935 at Waterbury, Conn., Hospital, he took a one-year residency at Children's Hospital, Detroit, Michigan.



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COMMUNICATIONS

Mr. William J. Burns,
Executive Director,
Michigan State Medical Society.

Dear Bill:

I believe it might be of interest to our members, both old and young, that for my recent disability, incurred while working in the yard of our cottage on Lake Charlevoix, August 27, 1957, the group insurance policy of the Michigan State Medical Society paid me for twenty-four months' complete disability and the group insurance policy of the Ingham County Medical Society paid me for eighteen months' complete disability.

Therefore, I believe you will agree with me that "it pays to belong" and "I am not from Milwaukee, but I ought to know" because I was one of the old members who advocated and voted for a group accident and sickness insurance program for both the Ingham County Medical Society and the Michigan State Medical Society. If any member doubts the value of the group insurance policy for the doctors, "ask the man who owns one."

Wishing our society much Happiness, Health and Prosperity through all the New Year,

Cordially and fraternally,

J. EARL MCINTYRE, M.D.

P.S. I am informed that since January 1, 1960, a new and better policy is available which pays full benefits for the remainder of the insured member's life so long as he is unable to practice medicine.

Lansing 33, Michigan
February 1, 1960

Doctors, Coaches to Meet

The University of Michigan has invited high schools and medical societies throughout Michigan to attend an Athletic Injury Conference, May 6-7. The conference will focus the attention of doctors of medicine, coaches and school administrators upon the health and safety problems of high school and college athletes. It is being co-sponsored by the U-M Medical Center and Department of Athletics.

Carl E. Badgley, M.D., head of orthopedic surgery at the U-M and chairman of the May 6 medical program, reports that inquiries and advance registrations for the conference are being handled by William Bender, Jr., of the U-M Medical Center.

JMSMS

Michigan Doctors' Day Set

The second annual Michigan Doctors' Day will be held at the University of Michigan Medical Center, Saturday, May 14.

The day-long program will include a "live" surgical procedure to be carried on the hospital's closed-circuit color television system.

Clinical programs, scientific talks and an extensive variety of special exhibits showing modern developments in research and clinical medicine will be included in the day's activities. There will also be a luncheon and a number of tours through the facilities of the Medical Center.

Michigan Doctors' Day is the University's annual opportunity to play host to all general practitioners and specialists who wish to become better acquainted with the staff and resources of the U-M Medical Center. It is open to all doctors in the state.

Chairman for the program this year is John R. G. Gosling, M.D., assistant professor of obstetrics and gynecology.

POSTGRADUATE OVERSEAS—Duke University School of Medicine for the fifth time is offering doctors a chance to combine postgraduate study with an overseas trip. The Hamburg-American ship, the T. S. Ariadne, will sail from Wilmington, North Carolina, on June 5, or from New York on June 6 and will terminate the cruise in Hamburg, Germany, on June 28, so that members of the cruise may continue in Europe or return home with an allowance of \$200 for passage home. Lectures will be given on shipboard on various subjects in medicine, pediatrics and thoracic surgery. For further information contact Allen Travel Service, Incorporated, 565 Fifth Ave., New York 17.

ELECT MICHIGAN M.D.'S—The Eighth Annual Meeting of the Cardiovascular Surgeons' Club was held at Children's Hospital and Highland Park General Hospital, Detroit, in January under the presidency of Sherwood Winslow, M.D., of Battle Creek. The annual banquet was held at Grosse Pointe Club.

Officers elected for the coming year are: Egbert Fell, M.D., Chicago, president; Alexander Blain, III, M.D., Detroit, president-elect; William Riker, M.D., Chicago, secretary; and James B. Blodgett, M.D., Detroit, treasurer.

The 1961 meeting will be held in January in Chicago.

M.D. SONS IN SPOTLIGHT—Three sons of Michigan doctors were honored at the Student Research Forum in February at the University of Michigan Medical School.

Each year, the medical students' honorary society, Alpha Omega Alpha, sponsors the Forum. This year, 12 undergraduate medical students were invited to present a formal paper on his own medical research—one of the highest honors for an undergrad.

The three sons of Michigan doctors so honored were Philip J. Howard, Jr., son of Philip J. Howard, Sr., M.D., Detroit; Michael G. Chen, son of Calvin H. Chen, M.D., Detroit, and Clifford Colwell, son of Clifford W. Colwell, M.D., Flint.

APPOINT JACKSON M.D.—John W. Rice, M.D., Jackson, has been appointed a member of the Commission on Hospitals of the American Academy of General Practice.

M.D. IN TOP OFFICE—Frederick C. Swartz, M.D., Lansing, chairman of the AMA Committee on Aging, is the new president of the Michigan Society of Gerontology. He was elected at the recent third annual meeting of the organization held at Michigan State University. Among the speakers at the conference was Silas C. Wiersma, M.D., Muskegon, a member of the MSMS geriatrics committee.



NEWS BRIEFS

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NEWS BRIEFS

SPEAKER—M. K. Newman, M.D., Detroit, gave a paper entitled, "Prognosis in Muscular Dystrophy," at the Regional Meeting of the American College of Physicians, Ann Arbor, in December. He also delivered a paper before the Oakland County Dental Society in January about "Occupational Hazards on a Neuromuscular Basis."

HEAR SENATOR CLARK—Narcotic addiction, delinquency and effects of segregation on child development were discussed by 4,000 mental health specialists and clinicians during the 37th annual meeting of the American Orthopsychiatric Association in February at Chicago.

Prominent speakers included U. S. Senator Joseph S. Clark of Pennsylvania, chairman of the U. S. Senate Subcommittee on Juvenile Delinquency.

COMMUNICATIONS SPEAKER—J. P. Gray, M.D., Detroit, discussed technical writing at a communications seminar sponsored in Detroit in February by the American Women in Radio and Television, Theta Sigma Phi and the Women's Advertising Club of Detroit.

SEEK MEA SYMBOL—Art students in Michigan colleges, universities and special art schools are helping the Michigan Epilepsy Association to find an insignia to represent the agency and the work it is doing in Michigan. If an appropriate symbol is found, the MEA will use it on posters, stationery and other printed materials.

The contest deadline will be April 20.

HONOR DETROIT M.D.—Harry M. Nelson, M.D., Detroit, has been appointed chairman of the American Cancer Society's Committee to Advance the Worldwide Fight Against Cancer. Working through the International Union Against Cancer, an affiliate of the World Health Organization, the Committee headed by Dr. Nelson, will encourage international cooperation in the study and control of cancer. Dr. Nelson, past president of the American Cancer Society, is chairman of its Southeastern Michigan Committee and also is chairman of the Michigan Cancer Coordinating Committee.

NAME ACS DIRECTOR—John Paul North, M.D., clinical professor of surgery at the University of Texas Southwestern Medical School, will become director of the American College of Surgeons January 31, 1961. He will succeed Paul R. Hawley, M.D., the director since 1950.

Dr. North is a fellow of the American College of Surgeons and chairman of the subcommittee on traffic safety.

OFFER FELLOWSHIPS—Six additional Fellowships for Residents in Ophthalmology will be awarded July 1, 1960, by the Guild of Prescription Opticians of America. Each Fellowship is for a total of \$1,800, payable in monthly stipends over the period of a three-year Residency. Applications must be received by May 15.

(Continued on Page 670)



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NEWS BRIEFS

(Continued from Page 668)

NATIONAL GROUP ELECTS—Daniel C. Riordan, M.D., Tulane University School of Medicine, is the new president of the American Society for Surgery of the Hand. He was installed at the recent annual meeting in Chicago.

George S. Phalen, M.D., Cleveland, was chosen president-elect.

CONFERENCE ON CONGENITAL MALFORMATIONS—The International Conference on Congenital Malformations will be held in London, July 18-22, under the sponsorship of the National Foundation. Further information may be obtained from Stanley E. Henwood, Executive Secretary, International Medical Congress, Ltd., 120 Broadway, New York.

WAYNE RECEIVES GRANTS—Grants totaling \$302,323 were received from the U. S. Public Health Service National Institutes of Health by the Wayne State University Board of Governors at its January and February meetings.

The February grants also included \$26,497 from the Michigan Cancer Foundation.

RECEIVE ADA PRIZE—A research paper by A. C. Curtis, M.D.; L. F. Montes, M.D., and Burton L. Baker, Ph.D., all of Ann Arbor, was awarded third prize in the annual American Dermatological Association essay contest. The research was about "The Cytology of the Large Axillary Sweat Glands in Man."



HONOR DETROIT M.D.—Lawrence Reynolds, M.D., (left), Detroit radiologist, receives congratulations from Earl E. Barth, M.D., Chicago, president of the American College of Radiology, following presentation of the College's Gold Medal to Dr. Reynolds. Dr. Reynolds is the out-going president of the radiological organization. The Gold Medal was awarded Dr. Reynolds "for outstanding contributions to the College . . . and the profession for which it stands." Presentation took place in New Orleans during the annual convocation February 5. The 1961 meeting of the College will be held in Chicago, February 8-11.

ON ACS PROGRAM—Charles G. Child, III, M.D., and Cameron Haight, M.D., both of Ann Arbor, had positions of leadership on the program for the sectional meeting of the American College of Surgeons during March at Boston.

NAMED MARKLE SCHOLAR—John R. G. Gosling, M.D., of the University of Michigan Medical Center, has been selected one of 25 U. S. scholars to receive John and Mary Markle Fellowships in Science.

The award, presented in New York City March 2, includes a five-year grant of \$6,000 a year.

MEDICAL TELEVISION SHOWS—The Michigan Health Council reports the following topics covered during the month of February on the weekly Sunday morning program over WJBK-TV in Detroit: Heart, Medical Associates, National Conference on Rural Health of the American Medical Association and also Industrial Nursing.

WALTER R. PARKER LECTURE—Tuesday evening, April 26, at St. Joseph Hospital, Ann Arbor, a joint meeting will be held of the Detroit Ophthalmological Club and the Detroit Ophthalmological Society.

The Michigan Triological Society and the Ophthalmologic Postgraduate Conference Dinner will be at St. Joseph Mercy Hospital Reception Hall at 6:30; the lecture will be given by Windsor S. Davies, M.D., at 8 p.m. in the amphitheatre.

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MEDICAL MEETINGS U.S.A.

West Virginia Academy of Ophthalmology and Otolaryngology Annual Meeting, April 10-12, Greenbrier Hotel, White Sulphur Springs, West Virginia; for information contact the secretary, A. C. Esposito, M.D., First Huntington National Bank Building, Huntington, West Virginia.

The Industrial Health Conference (which includes the 25th annual meeting of the Industrial Medical Association), April 26-28, new War Memorial Auditorium of Rochester, New York.

Fourth Post-Graduate Course on Fractures and Other Trauma, Chicago Committee on Trauma of the American College of Surgeons, April 27-30, John B. Murphy Memorial Auditorium, 50 East Erie Street, Chicago.

Second International Symposium of the Deborah Hospital, April 28-30, Bellevue Stratford Hotel, Philadelphia.

The 69th Annual Meeting of the Arizona Medical Association, May 4-7, Safara Hotel, Phoenix.

The Student American Medical Association, May 5-7, Statler-Hilton Hotel, Los Angeles.

The Forty-Fifth Session of the Trudeau School of Tuberculosis and Other Pulmonary Diseases, June 6-24, Saranac Lake, New York.



GRANTS FOR ARTHRITIS research have been awarded to (l-r) George W. Jourdan, M.D., Mrs. Chava Spivak and C. William Castor, Jr., M.D., all of the Rackham Arthritis Research Unit of the University of Michigan Medical School. The research fellowships for the three medical investigators came from the national Arthritis and Rheumatism Foundation. The awards were announced by the foundation's Michigan chapter, also prominent in arthritis research. The three are seeking to attempt to identify and measure the functional capacities of connective tissue cells, particularly those found in the joints.

APRIL, 1960

Say you saw it in the *Journal of the Michigan State Medical Society*

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NEWS BRIEFS

PAN AMERICAN MEDICAL ASSOCIATION—

The thirty-fifth Anniversary Congress will be held in Mexico City, May 2 to 11, 1960. Fifty branches of medical practice will be represented. For program, write the Executive offices: 745 Fifth Ave., New York 22, N. Y.

OFFERS BULLETIN—

The National Health Committee, Inc., 135 E. Forty-Second Street, New York, has published an arteriosclerosis bulletin by eight nationally known doctors, including Paul Dudley White, M.D. The bulletin is prepared as a public service for use of patients in cooperation with their Doctors. The Committee will send copies for use of physicians and patients.

RESEARCH ON CARE OF INJURED—

A grant of \$146,275 by The John A. Hartford Foundation, Inc., New York, to the American College of Surgeons to inaugurate a program for improving the medical management of the surgical and injured patient is announced by Ralph W. Burger, president of the Foundation, and L. S. Ravdin, M.D., chairman of the Board of Regents of the College.

"This grant will permit the College to enlarge its long-established activities in the field of trauma, both at the national and local levels," stated Dr. Ravdin. The National Committee on Trauma and 241 state and local trauma committees will be able to work more effectively in a concentrated effort to determine patterns of care of the injured patient, and to inaugurate improvements in this care, Dr. Ravdin explains.

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THE MENTAL HEALTH RESEARCH INSTITUTE, dedicated recently at the University of Michigan, will enable the staff to accelerate its study of the basic elements of mental illness. State funds provided more than \$750,000 of the costs with the U. S. Public Health Service contributing the balance for the \$1,500,000 institute building. The McGregor Fund, Detroit, contributed \$100,000 for special equipment.

LIST ACP COURSES—The American College of Physicians has announced its postgraduate courses for the spring of 1960. These courses include:

"Dermatology for the Internist," April 25-29, 1960, University of Michigan Medical Center, Ann Arbor.

"Early Detection and Prevention of Disease," May 9-13, 1960, University of Pennsylvania School of Medicine, Philadelphia.

"Internal Medicine," June 20-24, 1960, Indiana University School of Medicine, Indianapolis.

Registration forms on request from the College, 4200 Pine Street, Philadelphia 4.

YALE SCHOOL 150 YEARS OLD—The Yale School of Medicine will celebrate a century and a half of existence, October 28 and 29, 1960. The occasion will be marked by meetings, exhibitions and addresses. Among a notable group of guest speakers will be Sir Howard Florey of Oxford, England.

ARE BIRTH ABNORMALITIES ALWAYS HARMFUL?—James L. Wilson, M.D., chairman of the Pediatrics department, University of Michigan Medical Center, says not. Genius might well be a congenital abnormality. He feels that future research into birth disorders might unlock the secret of the "birth genius" while also finding means to correct serious physical deficiencies.

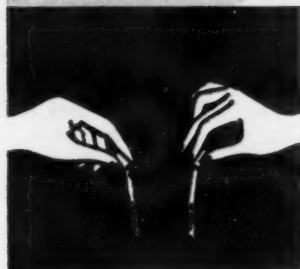
LEPTOSPIROSIS—The National Library of Medicine has just issued a bibliography on Leptospirosis in Literature from 1957-1959. Complimentary copies may be obtained by writing to Acquisition Division, National Library of Medicine, Washington 25, D. C.

CEREBRAL PALSY—The University of Michigan Medical Center has received a \$10,422 grant from the United Cerebral Palsy Association to support the second year of a study concerning the effects of drugs on the brain, including tranquilizers, anticonvulsants, hypnotics and muscle-

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relaxant drugs. The work thus far has helped pinpoint specific parts of the brain which are affected by drug action.

MENTAL ILLNESS CAUSE—Research work now being undertaken by the University of Michigan's Mental Health Research Institute in co-operation with Ypsilanti State Hospital may determine whether mental illness is caused by emotional or organic factors. This is the conclusion reached by Roland Berg, *Look* magazine medical writer, in an extensive story on psychiatry published in a recent issue.

CHRONIC DISEASE CONTROL—A two-weeks Institute on Chronic Disease Control will be held June 13-24, at the University of Michigan School of Public Health. Co-sponsors of the Institute with the School are: Directors of Chronic Disease Teaching Programs of Schools of Public Health, Association of State and Territorial Chronic Disease Program Directors, Michigan Department of Health, and the Public Health Service.

Application for participation must be received not later than May 15. Additional information may be obtained from The Director of Continued Education, School of Public Health, University of Michigan, Ann Arbor.

TRAVEL SOCIETY ELECTS—At the annual business meeting of the Michigan Obstetrical and Gynecological Travel Society, February 2, the following officers were elected

for the coming year: president, Jesse Ketchum, M.D., Detroit; vice-president, Lee Stevenson, M.D., Detroit; secretary-treasurer, Robert Dustin, M.D., Birmingham, and assistant secretary, Charles Darling, M.D., Detroit.

OFFER CANCER FILMS—Forty-one educational films for fighting cancer are described in a new catalog issued by the American Cancer Society for the use of clubs and organizations.

The Society's Southeastern Michigan Committee is circulating the new listing of its 16mm film library to groups throughout the tri-county area in an effort to spur bookings and help cut the 5,500 cancer deaths estimated here for 1960.

Groups interested in obtaining this free catalog of films should contact the Society at 2895 West Grand Boulevard in Detroit (Trinity 2-2277).

M.D. LOCATIONS—Through February 29, 1960

Placed by Michigan Health Council: Robert I. Crawford, M.D., Detroit; C. A. Johnson, M.D., Shelby-New Era Area.

Assisted by Michigan Health Council: Robert Silver, M.D., Royal Oak.

MSMS has liaison with over a hundred different health organizations in Michigan.

Michigan Authors

Carl E. Badgley, M.D., Ann Arbor, "Sports Injuries of the Shoulder Girdle," *Journal of the American Medical Association*, January 30, 1960. (This article was read in the Symposium on Athletic Injuries before the Joint Meeting of the Section on General Practice, the Section on Orthopedic Surgery, and the Section on Physical Medicine, at the 108th Annual Meeting of the American Medical Association, Atlantic City, June 12, 1959.)

M. K. Newman, M.D., Detroit, "Physical Medicine and Rehabilitation In Legal Medicine," *Annals of Rehabilitation*, September, 1959.

John W. Keyes, M.D., Gerald M. Breneman, M.D., Hernan Alvarez, M.D., Detroit, "Hydrochlorothiazide In The Treatment of Congestive Heart Failure," *Henry Ford Hospital Medical Bulletin*, September, 1959.

James Barron, M.D., Detroit, "The Control of Post-operative Pain by the Use of Local Anesthetic Pumps," *Henry Ford Hospital Medical Bulletin*, September, 1959.

M. K. Newman, M.D., Detroit, "Symposium on Designs for Retirement," *Public Health Reports*, December, 1959, U. S. Department of Health, Education and Welfare.

Joseph L. Ponka, M.D., Brock E. Brush, M.D., J. DeWitt Fox, M.D., Detroit, "Differential Diagnosis of Carcinoma of the Sigmoid and Diverticulitis," *Journal of the American Medical Association*, February 6, 1960.

Joseph A. Rinaldo, Jr., M.D., James A. Marvel, M.D., Gerald Fine, M.D., and Elizabeth Watson, Detroit, "Exfoliative Cytology in the Clinical Evaluation of Gastric Ulcer," *Henry Ford Hospital Medical Bulletin*, September, 1959.

John A. Churchill, M.D., Harold F. Schuknecht, M.D., Detroit, "The Relationship of Acetylcholinesterase In The Cochlea to the Olivocochlear Bundle," *Henry Ford Hospital Medical Bulletin*, September, 1959.

Charles Nwabueze Lemeh, M.D., Ann Arbor, "A Study of the Development and Structural Relationships of the Testis and Gubernaculum," *Surgery, Gynecology and Obstetrics*, February, 1960.

Gerald T. Havey, M.D., C. E. Rupe, M.D., Detroit, and **Robert I. McClaughry, M.D.**, Washington, D. C., "Analbuminemia With The Nephrotic Syndrome," *Henry Ford Hospital Medical Bulletin*, September, 1959.

Kenneth W. Carrington, M.D., James A. Taren, M.D., and Edgar A. Kahn, M.D., Ann Arbor, "Primary Repair of Compound Skull Fractures in Children," *Surgery, Gynecology and Obstetrics*, February, 1960.

A. E. Lamberts, M.D., "Tic Douloureux," *E.E.N.T. Digest*, January, 1960 (reprinted from *THE JOURNAL* of the Michigan State Medical Society.)

James D. Fryfogle, M.D., Robert Hornbeck, M.D., Donald Mehan, M.D., Walter Stenborg, M.D., Detroit, "Ruptured Diaphragmatic Hernia (Traumatic)," *The Journal of the International College of Surgeons*, January, 1960.

John V. Balian, M.D., Detroit, and **Harold F. Falls, M.D.**, Ann Arbor, "Congenital Vascular Weils In The Vitreous," *AMA Archives of Ophthalmology*, January, 1960.

G. H. Agate, M.D., Lansing, and **G. C. Brown, Sc.D.**, Ann Arbor, "Laboratory Data on the Detroit Poliomyelitis Epidemic—1958," *Journal of the American Medical Association*, February 20, 1960.

Khurshid A. Mian, M.P.H., Ann Arbor, "Isolation of Enteropathogenic Escherichia Coli From Household Pets," *Journal of the American Medical Association*, December 5, 1959.

W. W. Coon, M.D., P. W. Willis, III, M.D., and I. F. Duff, M.D., Ann Arbor, "Anticoagulant Therapy," *GP*, November, 1959.

Edward S. Mercantini, M.D., Ottawa, Ont.; and **Robert J. Schoenfeld, M.D.**, Birmingham, "Alopecia Mucinoso: Two cases in the Same Family," *Canadian Medical Association Journal*, October 1, 1959.

Richard H. Lyons, M.D., Ann Arbor, "The Role of the Modern Hospital in Medical Education," *University of Michigan Medical Bulletin*, October, 1959.

Sidney Friedlaender, M.D., Alex S. Friedlaender, M.D., and Lawrence Weiner, Ph.D., Detroit, "Gamma Globulin in the Management of Asthma Associated with Infection," *The American Journal of the Medical Sciences*, July, 1959.

Alex S. Friedlaender, M.D., and Sidney Friedlaender, M.D., Detroit, "Dexamethasone: A New Corticosteroid—Its Effect in Allergic Disease," *Annals of Allergy*, September-October, 1959.

EDITORIAL COMMENT

The Federal Employees Health Act —Its Significance for Medicine

(Blue Shield Medical Care Plans, Inc.)

The Federal government, as an employer—the largest employer in the U.S.A.—is about to provide medical care security to some 4 million Federal employees and their dependents.

Under the new Health Benefits Act passed by Congress last September, government workers will begin to enroll about June 1, 1960 in one or another of four types of hospital and medical care programs: (1) a service benefit plan (Blue Cross-Blue Shield); (2) an indemnity plan (underwritten by an insurance company); (3) an employee organization plan (of which a considerable number have been set up by Federal employee organizations); (4) a comprehensive "closed panel" plan (such as the Kaiser Health Plan or H.I.P.)—where such programs exist. Federal con-

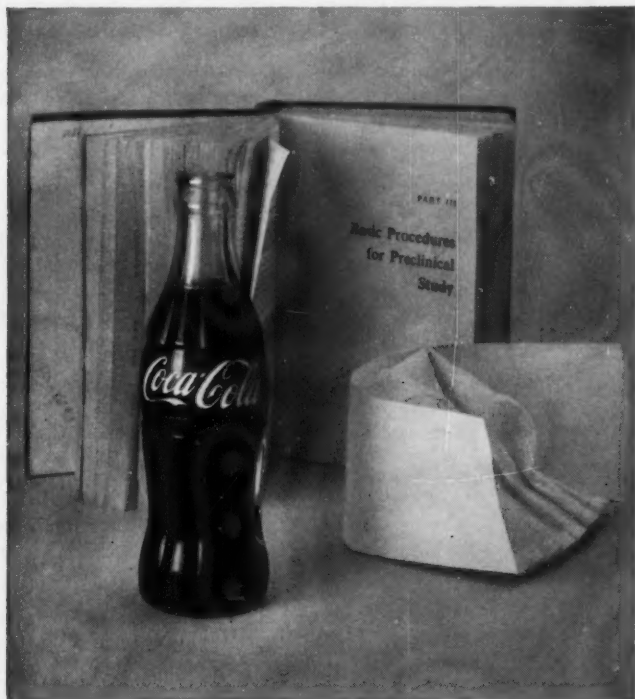
tributions will commence in July toward the cost of whatever plan may be selected by each Federal worker.

Each employee will have the utmost freedom to choose among the specific plans to be approved by the U. S. Civil Service Commission in negotiations now going on between the Commission and the "carriers" of the four types of program specified in the Act.

Our government has shaped its programs in accordance with the mutual desire of its employees and their doctors for a free choice of physician and plan.

To meet the natural requirements of the Civil Service Commission for a reasonable degree of uniformity among the programs offered by the 79 Blue Cross and the 67 Blue Shield Plans, many Plans will have to alter or add to their established benefit provisions. This will call for co-operation among all of us who are providing services to patients under our local Blue Shield Plans.

The significance of the Federal Employee Health Benefits Act for the future of American medicine can scarcely be exaggerated. Under the terms of this act,



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"pause that refreshes"
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often puts things
into manageable order.



EDITORIAL COMMENT

our government will contribute toward the cost of a hospital and medical care coverage program for all Federal employees. Thus, the government as an employer assumes a direct interest in, and responsibility for, the health care of its career servants.

Moreover, the government may be expected to scrutinize the effectiveness of the coverage provided in order to assess the capacity of our voluntary programs to function in an acceptable fashion in meeting the public's need for "prepaid" health services. Thus, our voluntary system of prepayment as well as those dedicated to the support of those programs may be said to be on trial. And if our physician-sponsored programs serve creditably and satisfactorily, the medical profession through its own prepayment plans will have struck a mighty blow for the future of free enterprise and the private practice of medicine.

The Price of Health

(Time, February 22, 1960)

U. S. families spend an average of about \$300 a year on health care, and total outlays have increased sharply in recent years. The Health Information Foundation reported this week that analysis of a 1957-58 study showed annual family expenditures at \$294, a 42 per cent increase in five years. Physicians' services

made up 34 per cent of health-care costs; hospitals, 23 per cent; drugs and medications, 20 per cent; dental services, 15 per cent; miscellaneous (spectacles, other appliances and special nursing), 8 per cent.

Some, but surprisingly little, of the \$87 increase since 1952 has been due to rising costs (mainly for hospital services, up 34 per cent). Most of the boost is due, said the foundation, to the fact that many families are using more—and more expensive—medical services.

Commends Hospital's Economy Drive

(From Michigan Hospital Association Bulletin,
Volume XIII, Number 11)

In a concurrent resolution, the Legislature highly commended Michigan hospitals for uniting in a search to find ways to bring about economies and improvements in hospital operations.

The resolution offered by Representatives Joseph J. Kowalski and Allison Green praised the Michigan Hospital Association and the Michigan Blue Cross for their joint sponsorship of the Annual Hospital Achievements Contest, the objectives of which are "to obtain from hospitals the best money-saving ideas and methods for streamlining operational efficiency."

The resolution also declared that "every Michigan community be urged to recognize and contribute to the support of local hospitals in their efforts to develop further economies and improvement in hospital care."

The Hospital Achievements Contest—sponsored jointly by the Michigan Hospital Association and its officially approved prepayment plan Michigan Blue Cross—annually offers cash awards totaling \$4,000 for the best ideas developed by hospital employees to improve patient care and save money for more efficient operations.

A total of 231 entries marked the 1959 competition and all have been compiled in a 200 page manual distributed to all 226 MHA member hospitals.

This is one of the major aims of the competition," A. Kent Schafer, Michigan Hospital Association president, explained. "It gives all of our hospitals a chance to study and if feasible, put into effect the improvements developed by others."

He added that ideas publicized by the two contests thus far, could add up to savings amounting to literally millions of dollars each year and have improved operational efficiency and patient care immeasurably.

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The Doctor's Library

Acknowledgments of all books received will be made in this column, and this will be deemed by us as full compensation to those sending them. A selection will be made for review, as expedient.

Books Received

THE EMERGENCY SYNDROMES IN PEDIATRIC PRACTICE. By Alfred J. Vignec, M.D., Clinical Professor of Pediatrics, New York University, College of Medicine, New York, N. Y.; Medical Director and Pediatrician in Chief, New York Foundling Hospital, New York, N. Y.; Director of Pediatric Division, St. Vincent's Hospital, New York, N. Y. New York: Landsberger Medical Books, Inc., 1959. Price, \$9.00.

AN INTRODUCTION TO THE STUDY OF EXPERIMENTAL MEDICINE. By Claude Berhard. Translated by Henry Copley Green, A.M. Introduction by Lawrence J. Henderson; New Foreword by I. Bernard Cohen, Professor, Harvard University. New York: Dover Publications, Inc., 1959. Price, \$1.50.

THE STORY OF DISSECTION. By Jack Kevorkian, M.D. New York: Philosophical Library. Price, \$3.75.

THE TEEN-AGE YEARS. A MEDICAL GUIDE FOR YOUNG PEOPLE AND THEIR PARENTS. By Arthur Roth, M.D. Garden City, N. Y.: Doubleday & Company, Inc., 1960. Price, \$3.95.

DOCTOR STRAND. By Boris Sokoloff. New York, Washington, Hollywood: Vantage Press. Price, \$3.50.

JEWISH MEDICAL ETHICS. A Comparative and Historical Study of the Jewish Religious Attitude to Medicine and Its Practice. By Rabbi Dr. Immanuel Jakobovits. New York: Philosophical Library, 1959. Price, \$6.00.

THE EVOLUTION OF MAN'S CAPACITY FOR CULTURE. Six Essays. By J. N. Spuhler, Ralph W. Gerard, S. L. Washburn, Charles F. Hockett, Harry F. Harlow, Marshall D. Sahlins. Summary by Leslie A. White. Arranged by J. N. Spuhler, Department of Anthropology, University of Michigan. Detroit: Wayne State University Press, 1959. Price, \$3.50.

WHAT NEXT, DOCTOR PECK? By Joseph H. Peck, M.D. Englewood Cliffs, N. J.: Prentice-Hall, Inc. Price, \$3.50.

NOTES OF A SOVIET DOCTOR. By G. S. Pondoev, Honored Physician of the Georgian SSR. Consultants Bureau, Inc., New York. London: Chapman & Hall, Ltd., 1959. Price, \$4.95.

DE MAGNETE. By William Gilbert. Translated by P. Fleury Mottelay. New York: Dover Publications, Inc. Price, \$2.00.

PAIN AND ITCH NERVOUS MECHANISMS. Ciba Foundation Study Group No. 1 in honour of Professor Dr. Y. Zotterman, M.D., R.V.O. Editors for the Ciba Foundation: G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P.,

and Maeve O'Connor, B.A. 41 illustrations. Boston: Little, Brown and Company, 1959.

FROM MAGIC TO SCIENCE. Essays on the Scientific Twilight. By Charles Singer. New York: Dover Publications, Inc. Price, \$2.00.

STERIC COURSE OF MICROBIOLOGICAL REACTIONS. Ciba Foundation Study Group No. 2, in honor of Prof. Dr. V. Prelog. Editors for the Ciba Foundation: G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Cecilia M. O'Connor, B.Sc. 37 illustrations. Boston: Little, Brown and Company.

A DOCTOR ENJOYS SHERLOCK HOLMES. By Edward J. Van Lier. New York, Washington, Hollywood: Vantage Press. Price, \$3.00.

THE CIGARETTE HABIT: A SCIENTIFIC CURE. By Arthur King. New York: Doubleday & Company, Inc., 1959. Price, \$2.00.

NEW AND NONOFFICIAL DRUGS. An Annual Compilation of Available Information on Drugs, Including Their Therapeutic, Prophylactic and Diagnostic Status, as Evaluated by the Council on Drugs of the American Medical Association. Philadelphia and Montreal: J. B. Lippincott Company, 1960.

A PRACTICAL GUIDE FOR GENERAL SURGICAL MANAGEMENT. By Julian A. Sterling, M.D., Sc.D.; F.A.A.S., F.A.C.G., F.A.C.S., F.I.C.S. et al; Diplomate, American Board of Surgery; Assistant Professor of Surgery, Graduate School of Medicine, University of Pennsylvania; Senior

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Attending Surgeon, Albert Einstein Medical Center; Chief Surgeon, Psychiatric Hospital, Philadelphia. Foreword by Herbert R. Hawthorne, M.D. New York, Washington, Hollywood: Vantage Press. Price, \$3.00.

SCHIFFERES' FAMILY MEDICAL ENCYCLOPEDIA. By Justus J. Schifferes, Ph.D., Director, Health Education Council, with a Medical Advisory Board of Eight Doctors: Glidden Brooks, Louis A. Buie, John Gorrell, Richard M. Hewill, Berwyn F. Mattison, Howard Rusk, Ralph F. Sikes, Austin Smith. The New Standard Guide to Health and Medical Care for the Entire Family. Three Books in One. An authoritative Medical Dictionary. An Indispensable First-Aid Manual. A Comprehensive Medical Encyclopedia. Fully Illustrated. New York: Permabooks. Price, \$.50.

CLINICAL ORTHOPAEDICS. The Hand. Part 2. By Anthony DePalma, Editor-in-Chief, with the assistance of Associate Editors, the Board of Advisory Editors, the Board of Corresponding Editors. Number Fifteen, Winter 1959. Philadelphia and Montreal: J. B. Lippincott Company, 1959. Price, \$7.50.

This volume is a continuation of Volume 13, namely, presenting its lead section around the hand. As before in this series, the mid-section deals with general orthopaedics and the last section with scattered items from here to there.

As noted in the previous reviews of this series, I find all these volumes of great value to the orthopedist and occasional practitioner of orthopaedics alike. This series, collected faithfully, is more helpful than any isolated text, both in regard to keeping current and in securing specific help in management of a given problem.

R.H.A.

INSTRUCTIONAL COURSE LECTURES. The American Academy of Orthopaedic Surgeons. Volume XVI. Editor, Fred C. Reynolds, M.D., St. Louis, Missouri. Illustrated. St. Louis: C. V. Mosby Company, 1959. Price, \$16.00.

As many specialty groups do, the American Academy of Orthopaedic Surgeons, Inc., at its annual meeting, conducts a series of instructional courses for its members and guests. This yearly volume is a presentation of selected lectures from the preceding year's meeting.

The subject matter is varied and, of course, differs from year to year. The instructional level is also geared to the postgraduate level and make no pretense to teach the uninitiated. However, the material given here is often much more

pertinent and to the point than the same material gathered for inclusion in a textbook with all the generalities that are necessary there.

Surgeons doing any volume of orthopedic work will want this volume each year. The occasional practitioner of orthopaedics will probably not find it helpful enough as a reference work or for aid in the specific treatment of a given problem.

R.H.A.

A DOCTOR'S LIFE OF JOHN KEATS. By Walter A. Wells, M.D. New York, Washington, Hollywood: Vantage Press, 1959. Price, \$3.95.

John Keats was trained as a doctor of medicine, licensed and practiced in a desultory way but more successfully that way than in anything else except his writing, and that was not financially rewarding. John Keats tried many things and had many experiences but usually came back to medicine. He died of tuberculosis at an early age. His writings were appreciated mostly after his death. One enjoys the book because of so many problems presented, and such a thorough medical review of his work and life.

LIVING CONSCIOUSLY: THE SCIENCE OF SELF. By John M. Dorsey and Walter H. Seegers. Detroit: Wayne State University Press, 1959. Price, \$4.95.

Doctors Dorsey and Seegers have given us a very unusual book written in the first person, telling about the experiences of life, how they were met, and suspicions of things to come. All this has been done very successfully. This is not a book that you sit down to read, but one you pick up and read a little at a time, placing yourself in the authors' experiences, appreciating their problems and solutions. We have thoroughly enjoyed the book and believe other readers will, too. It is full of thought for everyone.

SMOKING AND HEALTH. By Alton Ochsner, M.D. New York: Julian Messner, Inc., 1959. Price, \$3.00.

In this monograph, Doctor Ochsner presents a convincing case against smoking. He offers only one defense—to stop smoking and suggests ways of so doing.

The advertising industry in the tobacco companies are indicted for false and misleading advertising and their disservice to the public, in encouraging testimonial advertising to a hero-worship nation and in fostering the use of vending machines which make tobacco available to the very young in spite of restricted State laws.

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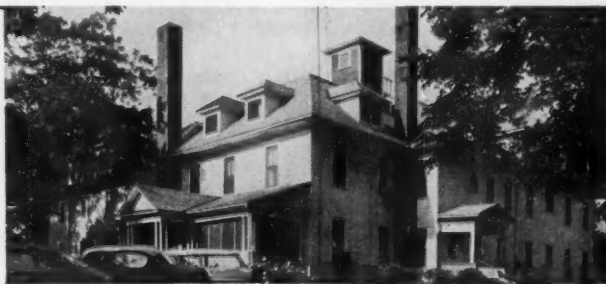
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Real dedication to a cause is demonstrated by Doctor Ochsner's sincere pleas against smoking. His is a "voice crying in the wilderness." This book is well worth while for those interested in the subject.

R.W.B.

LIVING BEYOND YOUR HEART ATTACK. By Eugene B. Mozes, M.D. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1959. Price, \$3.50.

Having written many articles for popular consumption in some of the popular magazines, *Coronet*, *Ladies Home Journal*, and others, as well as a book on sex of teen-agers, Doctor Mozes is now the author of this book for the heart victim.

It is written in an optimistic vein and answers the questions commonly raised by those recovering from or threatened with a heart attack. The style is entertaining and is filled with interesting anecdotes which lend emphasis and clarity to the exposition. It is recommended for patient reading.

R.W.B.

WORK AND THE HEART. Transactions of the First Wisconsin Conference on Work and the Heart. Edited by Francis F. Rosenbaum, M.D., Associate Clinical Professor of Medicine, Marquette University School of Medicine, and Elston L. Belknap, M.D., Professor and Director, Department of Occupational and Environmental Medicine, Marquette University School of Medicine. New York: Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 1959. Price, \$12.00.

Edited by Francis Rosenbaum and Elston Belknap and based on the proceedings of Wisconsin Conference on the Heart at Marquette University, this book deals with the effects of work and stress on cardiac function.

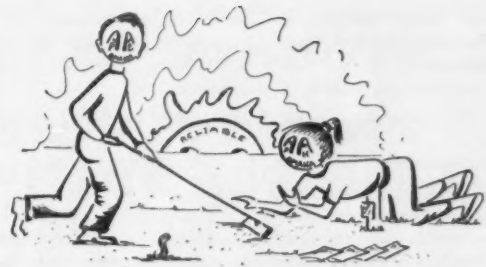
It is divided into five main sections from basic physiology to clinical physiology, pathology, work classification, and workmen's compensation, corresponding to the main panels of the conference. All aspects of the subject from that of basic scientific problems to broad social application are covered. Each panel moderator prepared a final summary of the unlimited discussion and formal presentation of his panel. These summaries and the manuscripts of the prepared papers at the panel meetings make up this large book of over five hundred pages.

Tests for cardiac function in the older group and those for functional evaluation in the afflicted are analyzed in detail. Results of work classification units and aspects of workmen's compensation and medico-legal problems are discussed. Areas of ignorance as well as information are identified in this field.

R.W.B.

CHRONIC ILLNESS IN A RURAL AREA. Chronic Illness in the United States. Volume III. The Hunterdon Study. Reported by Ray E. Trussell, M.D., M.P.H., and Jack Elinson, Ph.D., both of the School of Public Health and Administrative Medicine, Columbia University. Published for The Commonwealth Fund. Cambridge, Massachusetts: Harvard University Press, 1959. Price, \$7.50.

This is the third of a series on chronic illness and it is written by Public Health Specialists at Columbia University. It deals with a survey of prevalence of chronic illness in a rural community, specifically Hunterdon County, New Jer-



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sey. Disease problems and care needs are studied by the Hunterdon Medical Center, a local unit dedicated to the improvement of rural health. The work is sponsored by the Commonwealth Fund of Massachusetts.

This completes a series of four reports on chronic illness in the United States, sponsored by the Commission on chronic illness.

This report points up a startling lack of medical care, both in quantity and quality in the area studied, particularly in chronic disabling diseases sampled. The primary faults were failure to diagnose the disease and incorrect diagnosis when a diagnosis was made at all. Reason for not seeking care included unavailability, financial inability, and the patient's belief that care might interfere with his usual activity.

Details of screening and evaluation procedures are given as well as interview methods.

The book opens with a discussion of Highlights of the Survey for those who are not able to go through the large mass of detail on its conduction.

It is of general interest to public health people, sociologists, and politicians, primarily. It offers an insight into the opinion of high minded public health people regarding the standards of care in a rural community with existing medical facilities in one of our eastern States and indicates existing social trends in medicine. The book is worthwhile reading for enlightenment, if for nothing else.

R.W.B.



INTERVIEWS

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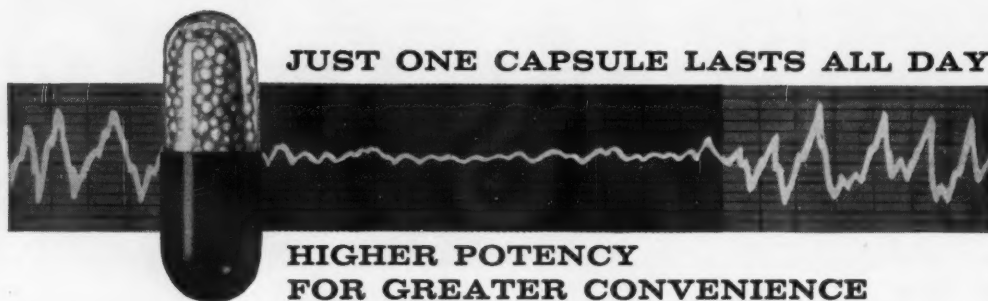
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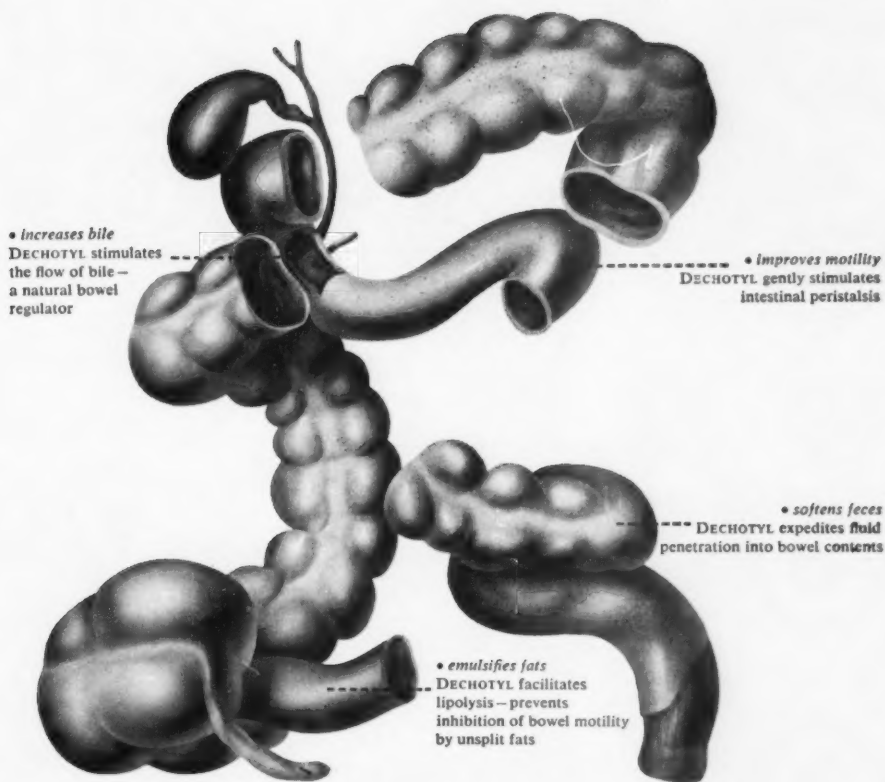
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